DUDLEY KNOX LIBRARY
NAVAL POSTGRADUATE SCHOOL

NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

WEAPON SYSTEM ACQUISITION MANAGEMENT
A VIABLE CAREER PROGRAM FOR THE
UNRESTRICTED LINE AVIATION OFFICER

by

Terence James Cooney

March 1977

Thesis Advisor: Carson K. Eoyang

Approved for public release; distribution unlimited.

T177962

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

DUDLEY KNOX LIBRARY
NAVAL POSTGRADUATE SCHOOL

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER

2. GOVT ACCESSION NO.

3. RECIPIENT'S CATALOG NUMBER

4. TITLE (and Subtitle)

Weapon System Acquisition Management
A Viable Career Program for the
Unrestricted Line Aviation Officer

5. TYPE OF REPORT & PERIOD COVERED

Masters Thesis:
March 1977

6. PERFORMING ORG. REPORT NUMBER

7. AUTHOR(s)

Terence James Cooney

8. CONTRACT OR GRANT NUMBER(s)

9. PERFORMING ORGANIZATION NAME AND ADDRESS

Naval Postgraduate School
Monterey, California 93940

10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS

11. CONTROLLING OFFICE NAME AND ADDRESS

Naval Postgraduate School
Monterey, California 93940

12. REPORT DATE

March 1977

13. NUMBER OF PAGES

158

14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)

Naval Postgraduate School
Monterey, California 93940

15. SECURITY CLASS. (of this report)

Unclassified

15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Project Manager
Career Development
Weapon System Acquisition Management

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The problem of obtaining unrestricted line aviation officers with the requisite experience and education to serve as Project Managers has plagued the Navy's Weapon Systems Acquisition Management Program since its inception. This research is directed at identifying the causes of this problem. The conflicts and constraints resulting from the integration of the Weapon Systems

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE
(Page 1) S/N 0102-014-6601

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

Acquisition Management subspecialty development program with the warfare specialty development program of the unrestricted line aviation officer are identified. Recommendations are made for the achievement of a viable career development program that will aid in the development of true professionalism in the area of weapon systems development and acquisition.

Approved for public release; distribution unlimited

Weapon System Acquisition Management

A Viable Career Program for the

Unrestricted Line Aviation Officer

by

Terence James Cooney
Lieutenant Commander, United States Navy
B.E., Villanova University, 1965

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the
NAVAL POSTGRADUATE SCHOOL
March 1977

ABSTRACT

The problem of obtaining unrestricted line aviation officers with the requisite experience and education to serve as Project Managers has plagued the Navy's Weapon Systems Acquisition Management Program since its inception. This research is directed at identifying the causes of this problem. The conflicts and constraints resulting from the integration of the Weapon Systems Acquisition Management subspecialty development program with the warfare specialty development program of the unrestricted line aviation officer are identified. Recommendations are made for the achievement of a viable career development program that will aid in the development of true professionalism in the area of weapon systems development and acquisition.

Table of Contents

I. INTRODUCTION 10

A. BACKGROUND 10

B. PURPOSE 12

C. SCOPE 13

D. METHODOLOGY 13

E. ORGANIZATION 14

II. CAREER DEVELOPMENT FOR PROJECT MANAGEMENT 15

A. WEAPON SYSTEM ACQUISITION MANAGER PROGRAM ... 15

1. Introduction 15

2. Navy WSAM Study of 1969-1970 18

3. 1970 to the Present 25

4. Current Navy Program 32

5. Career Development Pattern 39

6. Summary 39

B. THE PROJECT MANAGER 40

1. Introduction 40

2. Characteristic Skills 41

3. Qualifications 47

4. Selection 49

C. SUMMARY 52

III. CAREER DEVELOPMENT OF THE AVIATION WARFARE OFFICER 54

A. INTRODUCTION 54

B. NORMALIZED CAREER DEVELOPMENT PLAN 55

1. Aviation Training 56

2. First Sea Tour 56

3. First Shore Tour 58

4. Second Sea Tour 58

5. Second Shore Tour 59

6. Squadron Department Head Tour..... 60

7. Aviation Command 60

8. Post Command 61

C. CAREER MANAGEMENT SYSTEM 62

D. CAREER MILESTONES 64

1. Promotion Opportunities 64

2. Command Tour 67

3. Aviation Career Incentive Act 69

E. SUMMARY 70

IV. ANALYSIS OF WSAM DESIGNATED AVIATION OFFICER CAREER DEVELOPMENT PLAN 72

A. INTRODUCTION 72

B. NORMALIZED CAREER DEVELOPMENT PLAN 74

1. Aviation Warfare Specialty Development .. 74

2. WSAM Subspecialty Development 76

3. Overall Development Constraints 77

C. REQUIREMENTS ANALYSIS 79

1. Aviation Career Incentive Act 79

2. WSAM Experience 83

3. Promotion and Command 88

4. Education 101

D. CONCLUSIONS 104

V. RECOMMENDED CAREER DEVELOPMENT PROGRAM FOR THE WSAM DESIGNATED AVIATION OFFICER 108

A. INTRODUCTION 108

B. CAREER DEVELOPMENT PROGRAM 108

1. Policy Guidance 108

2. Organizational Framework 112

3. Career Program Management 113

4. Communications 116

C. SUMMARY 117

APPENDIX A INTERVIEW QUESTIONNAIRE AND RESULTS 118

APPENDIX B WSAM STUDY REPORT 127

APPENDIX C GUIDANCE FOR WSAM AVIATION SUBSPECIALTY BOARD 144

APPENDIX D RECOMMENDED SELECTION CRITERIA FOR WSAM BY RANK (1977) 146

APPENDIX E AVIATION CAREER INCENTIVE ACT OF 1974 150

LIST OF REFERENCES 154

INITIAL DISTRIBUTION LIST 158

List of Tables

Table	
I	WSAM Related 13XX Shore Billets
II	WSAM Coded 13XX Officers
III	Profile Elements
IV	Profile Elements
V	Leadership and Managerial Skills
VI	Grade Promotion Flow Points
VII	Unrestricted Line Promotion Opportunities
VIII	Aviation Officer In-Zone Promotion Percentage
IX	In-Zone Promotion Rate - 13XX Captain
X	Aviation Warfare Subspecialty Development
XI	WSAM Subspecialty Development
XII	Defense Systems Management College Survey Results
XIII	13XX In-Zone Promotion Date - 1977-76
XIV	13XX In-Zone Promotion Percentage - Naval Material Command
XV	13XX Captain Promotion Opportunity
XVI	13XX Captain Promotion Opportunities - Proven Subspecialist
XVII	Captain Command Opportunity

List of Figures

Figure

1. Career Development Program - Aviation Warfare Officer (1970)

2. Career Development Pattern - URL Aviation Officer (1972)

3. Recommended Selection Criteria for WSAM by Rank

4. Career Development Pattern - URL Aviation Officers (1976)

5. Profiles: Aviation Project Manager Selectees FY 1975-1976

6. Aviation Officer Professional Development Path

7. WSAM Aviator Career Development Plan

I. INTRODUCTION

A. BACKGROUND

The weapon systems acquisition process of the 1960's was characteristic of a system that was being driven by a rapidly expanding technological base. Aided and abetted by an increasing defense budget and decentralized control by the office of the Secretary of Defense, the Services proliferated programs in an attempt to capture and convert this technology into viable weapons systems. By the late 1960's, the Navy, alone, had established almost seventy project offices, each reporting to either the Chief of Naval Material (CNM) or the Commander of one of the Navy's Systems Commands. As might be expected, the increase in the number of programs also produced an increase in the number of failures and sufficient examples of mismanagement to warrent public criticism of military methods of acquiring new weapon systems. The summer of 1969 marked the beginning of a long list of concentrated reviews of the systems acquisition process that continues even to today. Each study has analyzed the system from the broad perspective down to the minutest detail and developed recommendations in an attempt to improve the effectiveness and efficiency of the acquisition process. In all these studies one common denominator may be found and that is the need for capable, trained and experienced people to manage the programs of the Services. For while the increased

sophistication, complexity and cost of new weapon systems had served to surface program management as the management system for the Services, it had also illuminated the crucial importance of selecting Project Managers who were capable of meeting the challenge of efficient resource management.

In October of 1969, the Chief of Naval Material in a memorandum to the Vice Chief of Naval Operations [Ref. 1] indicated the ordering of the Navy's response priorities when he stated:

> The adverse publicity and Congressional criticism of of military and more specifically, Navy procurement practices during recent months has re-emphasized the fact that one of the Navy's major concerns must be that of training officers who will become the Weapon System Acquisition Managers of the future or assume major procurement management responsibilities within the Navy.

In addition CNM indicated the necessity to develop career patterns oriented to the overall acquisition function for all officers regardless of designator so that experience in acquisition management could be attained within the confines dictated by operational requirements.

For the Navy the problem became how to devise career fields and opportunities to attract, develop, retain and reward the outstanding military officers required as Project Managers. In May of 1972 as a result of studies directed by the Chief of Naval Operations, a Weapons System Acquisition Management (WSAM) Program for officers was established to provide a subspecialty community from which the Navy could select and develop qualified officers to fill support and management billets within the acquisition structure.

Unfortunately the process of attracting appropriately qualified and motivated personnel to manage the major system acquisition program has not kept pace with advancements in the structuring of the WSAM Program. Selection to the program is still being carried out on a primarily non-volunteer basis even though the program was envisioned as voluntary. Thus though the mechanics of development have been established, the problem of attracting officers into the program appears to still exist.

Though this problem pervades all warfare and specialty communities, it is exacerbated in the aviation community by two major factors: the overwhelming orientation of the community toward aviation command and the pressures applied by the Aviation Career Incentive Act of 1974 which requires that an aviation officer pass certain definitized "gates" in his career in order to continue receiving aviation pay. Both of these factors bias the motivation of the aviation warfare officer against any career program that is viewed as having an adverse effect on his competitiveness for command or on his ability to satisfy the requirements of the Aviation Career Incentive Act. For this warfare community then, any subspecialty career program must present an acceptable balance between the subspecialty development program and the operational requirements.

B. PURPOSE

The purpose of this thesis is to examine the Weapon System Acquisition Management (WSAM) subspecialty program to

determine if the operational, technical, business management and experience qualifications required of program management can be satisfactorily integrated with the needs and requirements of the aviation officer. Recommendations are made that should increase the probability that outstanding officers can be attracted, educated and trained as Project Managers without compromising their operational competitiveness and promotional opportunities.

C. SCOPE

This thesis is directed specifically at the Unrestricted Line Aviation Officer (13XX) Community. The analysis of the WSAM subspecialty and the requirements and qualifications for selection as Project Manager is oriented toward identifying those problems, requirements and constraints that would have an adverse effect on the career of a 13XX officer. It is felt, however, that portions of the analysis could be equally applicable to other warfare communities and further research from the view point of these other warfare communities should be conducted.

D. METHODOLOGY

Data in support of this thesis were obtained through a review of the historical and recent official documents pertaining to the WSAM program and a review of the recent literature concerning program management. In addition, interviews were conducted with 12 out of 14 WSAM designated 13XX officers currently assigned as Project Managers or

Deputy Project Managers; cognizant personnel at the Bureau of Naval Personnel; and selected officers in the program management policy network of the Naval Material Command. Finally a questionnaire eliciting comments relative to the skills and qualifications required of the Project Manager was administered to those Project Managers and Deputy Project Managers interviewed. A copy of this questionnaire and the results obtained are presented in Appendix A. The information obtained through these methods has been synthesized into recommendations regarding establishment of a viable WSAM subspecialty development program for the aviation officer.

E. ORGANIZATION

In the following chapters both the WSAM subspecialty development program and the aviation warfare specialty development program will be examined as separate entities. The criteria, qualifications and milestones of each development program will be identified. The two programs will then be integrated into a single development program. The conflicts resulting from such an integration and the constraints they impose on the development of the unrestricted line aviation officer as a WSAM subspecialist will be identified. Finally recommendations will be made regarding the design of a viable career development program for the WSAM designated URL aviation officer.

II. CAREER DEVELOPMENT FOR PROJECT MANAGEMENT

A. WEAPON SYSTEM ACQUISITION MANAGER PROGRAM

1. Introduction

In 1969 the systems acquisition management process evoked a significant amount of high level Government attention and scrutiny. In the Congress a number of amendments were introduced to the fiscal year 1970 Defense Authorization Bill in which concern over the acquisition of weapon systems was expressed. The Subcommittee on Economy in Government in its report (91st Cong., 1st sess) of May 22, 1969 [Ref. 2] stated:

> The Federal Government has not been adequately controlling military spending. As a result, substantial unnecessary funds have been spent for the acquisition of weapons systems and other military hardware. Mismanagement and laxity of control over this expensive program are creating heavy burdens for every taxpayer.

The Senate Committee on Armed Services added further impetus to the rapidly growing Congressional concern over inefficient military management in its Report 290, on the Defense Authorization Act (91st Cong., 1st sess) of July 3, 1969 [Ref. 3] when it stated:

> The committee is greatly concerned over the increased cost of new weapon systems generally and the fact that certain weapon systems now in procurement or development have greatly exceeded their original cost estimates.

This high level interest provided the impetus for the Navy to come to grips with the problems associated with improving the quality of Navy project management. In its

evaluation, the Navy gave early recognition to the importance of people in the acquisition equation. In a memorandum to the Vice Chief of Naval Operations (VCNO) dated 8 October 1969 [Ref. 1], the Chief of Naval Material (CNM) spotlighted this important element:

> ... one of the Navy's major concerns must be that of training officers who will become the Weapon System Acquisition Managers of the future or assume major procurement management responsibilities within the Navy.
>
> ... in order to acquire the expertise necessary a career pattern oriented to the overall acquisition function is needed which entails an officer's (regardless of designator) serving 12-14 years in the various phases of acquisition out of a 25-27 year career leading to consideration for Flag rank. The Navy, with few exceptions has not recognized the necessity for highly qualified flag officers in this important area of expertise.

In his reply of 19 November 1969 [Ref. 4] the VCNO highlighted his misgivings with such a program:

> That concentration (12-14 years) in this field was not consistent with the concept of an unrestricted line officer subspecialist with one or two tours in a subspecialty and no qualifying tours other than graduate school.
>
> That such an officer would be oriented toward economic and engineering skills vice the tactical and strategic skills of naval warfare.

He did, however, request the Chief of Naval Personnel to conduct an informal staff study of the matter.

On 25 November 1969 formal interest by the Office of the Secretary of Defense in the improvement of Department of Defense program management was expressed in a memorandum which forwarded the conclusions and recommendations of the Defense Science Board's 1969 Summer Study of Research and Development Management. The memo requested views and

suggestions on the findings and recommendations, with particular emphasis on incentives for project management performance and a system for measuring individual performance in project management. One of the key recommendations of the Summer Study Panel [Ref. 5] was as follows:

> We recommend, therefore, serious consideration of establishing a career specialty of weapon systems acquisition management. A major increase in the recognition, the status and the opportunities in program management may be necessary to attract and retain a larger share of the most capable career officers and senior civilians that we wish to see committed to this activity.

One week after Secretary Packard forwarded the Summer Study results to the Services, the Chief of Naval Operations requested the Chief of Naval Personnel (CNP) to coordinate the Navy's response. The study was to examine the personnel and educational requirements of project management and the programs and assets available to satisfy those requirements. In addition, CNP was to reorient career personnel planning so as to provide adequate formal, as well as practical, training before officers were assigned to a specific project. Attention was to be focused on the importance of the Project Manager and the opportunities available to those who could prove by performance that they were experts in their specialty. The CNO concluded his request [Ref. 6] with:

> After you have worked out a tentative plan to achieve the desired results outlined above, I would like to confer personnaly with you, the Vice Chief of Naval Operations, and the Chief of Naval Material and firm up the action necessary to develop true professionalism in the area of weapon systems development and acquisition.

2. Navy WSAM Study of 1969-1970

The informal study group convened by the Chief of Naval Personnel and chaired by the Vice Chief of Naval Personnel for Plans and Programs was comprised of several Captains from within the Bureau of Personnel and representatives from the Naval Material Command. The goals of the study group's efforts were consolidated as follows:

(1) Determine how to:

(a) Structure training and education for Project Managers.

(b) Develop means to attract, develop and retain Project Managers.

(c) Create incentives for Project Manager performance.

(d) Measure individual Project Manager performance.

(e) Increase Project Managers' authority.

(f) Make maximum use of the Project Management Course at Wright-Patterson Air Force Base.

(g) Focus attention on project management through Navy publications.

(2) Identify:

(a) The specialty designators of officers to be utilized as Project Managers.

(b) The number of Project Managers requied by the Navy during the next decade.

(3) Examine and recommend approaches to the questions of:

(a) Establishing a career specialty in Weapon Systems Acquisition Management, including career rotation, tour lengths, interfaces with other areas of subspecialization, etc.

(b) Ensuring equitable treatment of Project Managers by promotion selection boards, including Flag.

(c) Using Civilians instead of military officers as Project Managers.

A progress report on the WSAM study was forwarded to the Chief of Naval Operations on 4 March 1970. The final report was forwarded to the CNO by the Chief of Naval Personnel on 28 April 1970 and is included in Appendix B. The major areas of concern, and the general conclusions associated with each were listed as follows:

a. "Major Command" equivalency for Project Managers

It was determined that some Project Manager positions should be designated as "equivalent to a major command" and that the Secretary of the Navy should continue to provide guidance to Flag Officer Selection Boards by stressing the need to select officers who were best fitted for future assignment even though their past assignments had been outside the norm of traditional career patterns.

b. Selection, Ordering and Tour Lengths for Project Managers

Project Managers should be selected by board action within the Bureau of Naval Personnel with CNM and Systems Command personnel in the Bureau of Personnel included as members of the board. Selectees for Project Manager positions should be ordered to the billet via the Defense Weapon Systems Management Course unless they had previously attended. Initial tour lengths for Project Managers should be established as three years, with extensions beyond this period depending on the status of the project.

c. Adequacy of Functional WSAM Training

The Defense Weapon System Management Course at Wright-Patterson Air Force Base was judged to be basically adequate. While some changes in the course content were deemed to be desirable, attempts to identify changes that would satisfy all potential users were unsuccessful. It was felt that implementing the procedure in paragraph (b) above would provide more immediate utilization of the training provided by the course.

d. Postgraduate Education for Project Managers

The Management curriculum at the Naval Postgraduate School was reviewed and it was determined that the Material Management electives should be strengthened and oriented so as to provide more emphasis on Weapon Systems Acquisition. In addition, it was reported that the Superintendent of the Postgraduate School was developing a specific educational program in support of project management consisting of formal education in engineering, science, or mathematics followed by graduate education in the field of management, business administration, or industrial engineering. It was considered likely that such a curriculum would attract many competent officers who were not necessarily motivated for engineering or science programs. This education should be obtained during the first shore duty tour.

e. Project Management Subspecialty

It was determined that experience in project management associated activities was a major ingredient in producing officers who were qualified for top project manager positions. This required experience base could only be developed within the framework of approved career patterns if the appropriate billets were identified and if the right officers were assigned to these billets in sequence. As an ancillary part of this study an examination of the billet structure of the Navy was conducted which considered specifically those billets at all shore commands in the grade of Captain, Commander, and Lieutenant Commander. The analysis included consideration of the following factors:

> Weapon Systems Acquisition Management was not discreetly and uniformly defined, as was an area of endeavor in engineering or science.
>
> A variety of billets and activities associated with WSAM existed outside the Systems Commands' Headquarters.
>
> Neither the billets associated with WSAM nor the personnel in training for qualification as Project Managers were uniquely identified at the time of the study.

The study revealed that approximately 10% of the unrestricted line officer shore requirements were associated with Weapon System Acquisition Management. A tabulation of the number of billets identified for the URL Aviation Community is presented in Table I.

Table I

WSAM Related 13XX Shore Billets

LCDR	104
CDR	166
CAPT	78
Total	348

It was felt that the Navy could develop through a coordinated series of assignments, sufficient officers with the right amount of warfare expertise, education and WSAM experience from whom Project Managers could be selected.

In support of this contention representative career development plans were presented as part of the report's conclusions. Figure 1 depicts the envisioned development program for the Aviation Officer. In order for these development plans to succeed, assignment to a project management billet would have to be viewed as a step up the command opportunity and promotion ladder, and the Navy's performance record in recognizing and rewarding superior achievement in project management would have to withstand the critical scrutiny of the ambitious officer offered this way-point on the route to the top of his profession. It was felt that this could best be accomplished by providing clear and open proof that extensive experience in this field even at the expense of operational tours would not be a detriment toward Flag selection

Figure 1

Aviation Warfare Career Development Plan
WSAM Subspecialty

GRADE	YRS	TOTAL WSAM REQ ANNUAL REQ	DESCRIPTION AND TYPES OF BILLETS
ENS/JG/LT	0-9 1/2	0	First and second sea tours with basic warfare development. Graduate education in support of senior billet requirements.
LCDR	9 1/2-11 1/2	104 billets 52 officers/yr	Air System Command, NPRO, NATC, Asst. to branch/div heads. OPNAV, Graduate education for those not previously attending.
LCDR/CDR	11 1/2-16 1/2	0	Third sea tour.
*CDR	16 1/2-18 1/2	166 billets 83 officers/yr	NMC, Air Sys Com, OPNAV, NavAirLant/Pac, NPRO, Asst. PM, Branch Heads, DWSMC.
CDR	18 1/2-20 1/2	0	Fourth sea tour.
*CAPT	20 1/2-22 1/2	78 billets 39 officers/yr	OPNAV, Joint Staff, NMC Air Sys Com.
*CAPT	22 1/2-25 1/2	0	Deep draft, Major Command.

*Note 1. Commanders who do not serve an entire third sea tour can fill some of the 166 Commander billets allocated to this time frame. Number is a function of operating force requirements.

*Note 2. Captains with 25-30 YCS can fill some of the 78 Captain billets allocated to this time frame. Number is a function of the actual inventory remaining in the Navy and qualified in this area of endeavor.

*Note 3. Designated Major Command Equivalent billets will be filled in this time frame.

In an associated study of the career patterns of two hundred twenty-eight (228) unrestricted line Flag officers done by Rear Admiral Rice, it was concluded that about ten percent (10%) of the unrestricted line officers could follow career patterns which were "material oriented" when ashore and still have reasonable opportunity for promotion to Flag rank. It further stated that "... with official recognition of this pattern variation (not a particular subspecialty), and instruction to detailers and Selection Boards, at least 10% of the URL officers could work (and survive as a URL officer) in the material business to the extent necessary to be well qualified and serve as Project/Weapons Acquisition Managers" [Ref. 7].

On 11 August 1970 in a letter to the Chief of Naval Personnel, the CNO concurred in the recommendations of the study group subject to some specific changes in the implementing procedures. The title Major Project Manager (MPM) would be used to identify Project Managers selected by board action. The Major Project Manager Selection Board would be separate from the major ship and shore command selection board. This was considered necessary because the desired representative expertise for selection of Major Project Managers would not necessarily be characteristic of a major command board. Selection of an officer for a MPM billet would not exclude that officer from consideration for a major sea command. The Chief of Naval Material would nominate MPM billets and forward nominations with the project

charter to the Chief of Naval Operations (OP-01) for approval. The letter also directed the establishment of a subspecialty in project management upon approval of the proposed curriculum at the Naval Postgraduate School and the development of a well planned career program for potential Project Managers, regardless of designator. It observed that in the case of a potential Project Manager who was an unrestricted line officer, a particularly inflexible series of coordinated assignments would be necessary to achieve the desired mix of managerial and operational experience along with the necessary education. However, it concluded that "... the time has come to provide the stimulus and changes necessary to formulate and implement a viable program to provide a more professional status and greater recognition to personnel involved in major project management." [Ref. 8]

3. 1970 to the Present

a. Formalizing the Structure

As the Navy moved to implement the results of the WSAM study further reinforcement of the importance placed on project management by sources external to the Department of the Navy was received in the form of Department of Defense Directive 5000.1 "Acquisition of Major Defense Systems." This Directive established policy for major defense system acquisitions in the Military Departments and Defense Agencies. In the area of project management it postulated that successful development, production and deployment of any major defense system was primarily dependent

upon competent people with the authority they needed to carry out a set of clearly defined responsibilities. The assignment and tenure of Project Managers, therefore, was a matter of great concern and the DOD Components were directed to develop career incentives designed to attract, retain and reward competent personnel.

In August of 1971 the Director of the Officer Distribution Division in the Bureau of Naval Personnel (BUPERS) formally established the position of "Assistant Director for Subspecialty Management" with specific responsibilities which included:

> Developing division policies regarding community size, criteria of selection and evaluation of development paths to insure the existence of viable communities.
>
> Insuring community continuity, including promotion, equality, and establishment of billet priorities for optimal use of resources.
>
> Monitoring assignment of all WSAM sub-specialists.

A "WSAM Manager" was included on the staff of the new assistant director.

It was not, however, until the issuance of OPNAV Instruction 1211.8, Subject: Manpower Policy in the Weapon System Acquisition Field in January 1972, that the major recommendation of the WSAM Study were implemented and the formal structure of the WSAM subspecialty program established. Among the major action items were:

(a) The identification of billets and personnel associated with Project Management and Weapon System Acquisition duties.

(b) The establishment of "Major Command Equivalency" for certain designated major projects,

(c) The selection of Major Project Managers by board action.

(d) The development of formal administrative procedures for enroute training and turnover time to ensure project continuity.

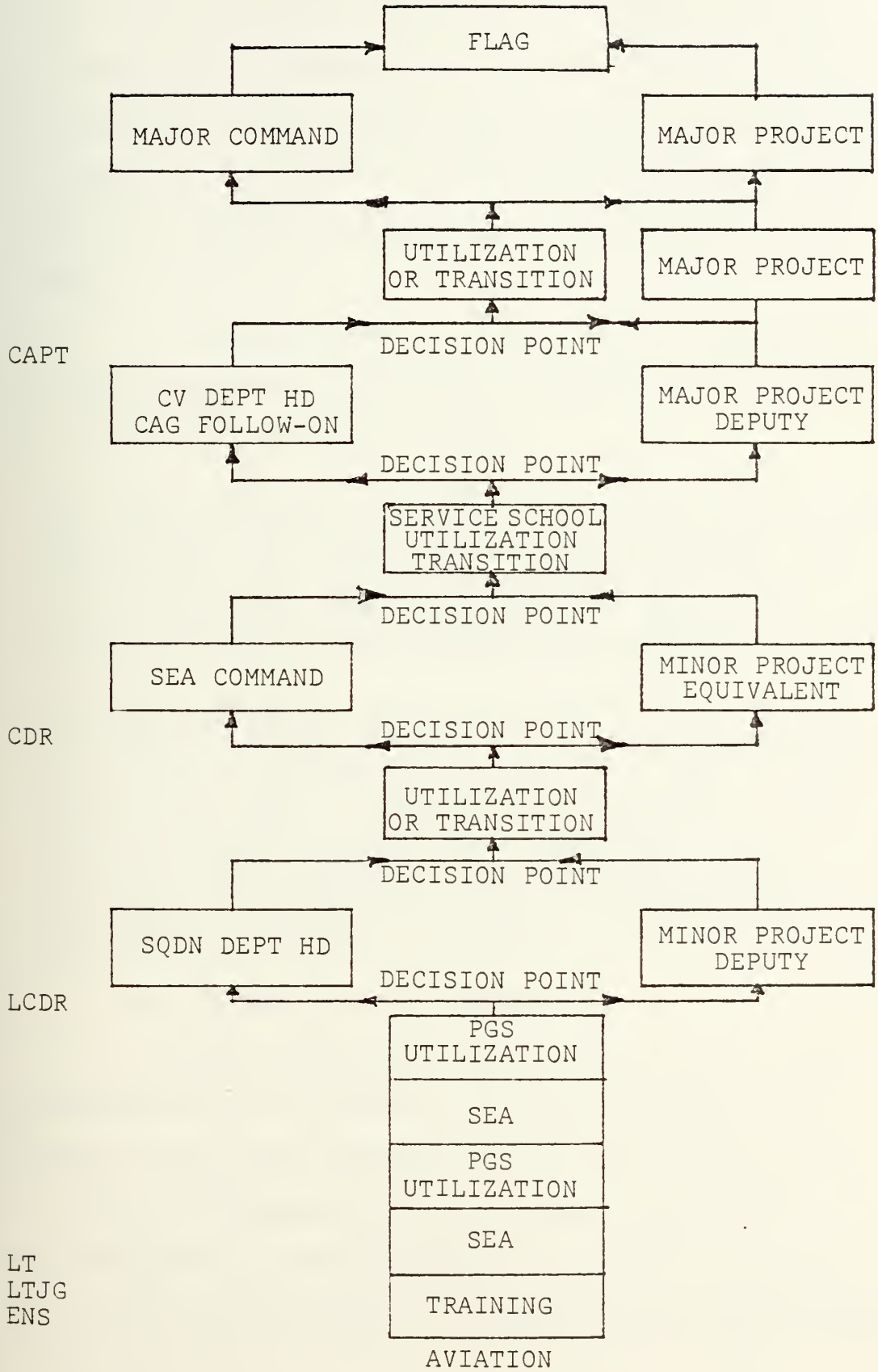
(e) The establishment of a career development program to ensure that potential Major Project Managers attain the necessary education and experience.

(f) The designation of the Chief of Naval Material, as the Project Manager Subspecialty Advisor.

In order to support the policies established by the OPNAV Instruction, the Chief of Naval Personnel issued BUPERS Instruction 1040.2 in May of 1972. This instruction established the Weapon Systems Acquisition Management (WSAM) Program of the Navy and established a special coding to identify officers who were selected for participation in the WSAM program. Selection to the program would be by ad hoc board and would be primarily from, but not limited to, those officers with subspecialties in the areas of engineering, physical sciences and management. Unrestricted line officers who received the WSAM coding would retain their warfare specialty designators and would rotate between assignments in their warfare specialties and weapon systems acquisition billets. The then proposed career pattern for the URL Aviation Community is depicted in Figure 2. The WSAM Program Manager in the Bureau of Naval Personnel was given the responsibility of insuring proper development and utilization of the selected officers and assisting in the career program of each officer.

Figure 2

WSAM Career Development Patterns



The first Weapon Systems Acquisition Management Subspecialty Selection Board met in October of 1972 to select and designate subspecialists from the Aviation Community. The guidelines used by the board for the selection process are shown in Appendix C. In this first screening approximately 300 Aviation Officers were identified for WSAM coding.

In its report following the selection [Ref. 9], the board provided a perceptive insight into some of the key problems of the WSAM program.

> It is to be expected that many of these officers (URL CDRs and LCDRs) will decline WSAM coding, and others will be in great demand for other billets, simply because they are top performers. This situation requires the initial selection to be relatively large in relation to the number of billets to be filled, and works against the philosophy of a small selection of only the very best qualified.
>
> Much will depend in the future on the extent to which a postgraduate degree becomes a widely understood initial step toward a technical or managerial career pattern. This board has reviewed many fine records in which officers have spent three years in engineering postgraduate study, and have subsequently never been assigned to a support billet requiring that education. The resources required to support this unutilized education may well be less critical than the three prime years a promising young officer spends away from an operational billet.

b. Education and Training

Since graduate education was to be a significant qualification in the WSAM coded officer's background, a Systems Acquisition Management curriculum was established at the Naval Postgraduate School in September 1972. This course was designed to provide graduate education leading to a Masters of Science degree in Management to those officers who

already possessed an engineering baccalaureate degree. In addition, provision was made for those students enrolled in the graduate technical curricula to obtain dual masters degrees by completing a year of study in the Systems Acquisition Management curriculum. In recent years, the Systems Acquisition Management course has been opened to students with a non-technical background in recognition of the necessity for graduate level management education in other than the technical divisions of project management. In addition to graduate education, functional training is provided by the Project Manager and Executive Refresher Courses at the Defense Systems Management College, Fort Belvoir, Virginia; the Navy Systems Acquisition Management Course at the Navy Logistics Management School, Anacostia and a number of short courses in business/financial management.

c. Career Management

In response to a number of critical reviews of Department of Defense Major Systems Acquisition procedures and policies [Commission on Government Procurement 1972; AMARC 1974; NMARC 1974], Deputy Secretary of Defense William P. Clements issued DOD Directive 5000.23 "System Acquisition Management Careers" on 26 November 1974. This directive established the current DOD policy for the selection, training and career development of the personnel required to manage major defense systems acquisitions. In establishing the required career fields, the DOD Components were directed to identify the following standards and criteria.

Define qualifications for selection to include performance, experience, level of training, and formal education, applicable to each entry grade. Selection of an individual not having proven performance in acquisition management should be made conditional until such performance becomes a matter of record.

Determine the approximate number of personnel at each rank/grade required to man the career fields. Ensure that grade levels are commensurate with the responsibility, authority, program accountability, and broad supervision which is exercised over functional and contractor activities. The grade structure in program offices should recognize the great importance of systems acquisition.

Develop a career progression plan including: Training and professional education requirements; identification of types of experience considered beneficial for assuming higher level Program Manager positions; Administrative Control; and Provisions for advancement based on demonstrated performance.

Institute a method that centralizes systems acquisition management employment opportunity information so it is readily accessible to interested individuals.

Establish maximum assignment flexibility for civil servants within existing Civil Service Regulations, including mobility agreements.

Performance measurements shall be developed and emphasized in order to insure that only the most competent individuals are retained and rewarded in the System Acquisition Management career field.

In addition to establishing the above mentioned standards, the Services were to provide opportunities for advancement for those in the Systems Acquisition Management field that were equivalent with those of their contemporaries in operational, line and command positions. Further, promotion boards were to include experienced system acquisitions management representation to insure that only the best qualified, based on demonstrated performance, were selected for promotion.

The Directive also provided the Services with specific guidelines in regard to the individuals to be selected as Project Managers. Colonels/Captains or civilian equivalents were not to be considered for assignment as Project Managers unless they had project management or system acquisition experience, to include one or more assignments to a project office. Heavy reliance was to be placed on past performance records in those fields in determining those best qualified to be Project Manager. Once selected, all major system Project Managers were to have professional education at the Defense Systems Management College's Program Management or Executive Refresher Courses, either before or shortly following assignment to a major program office. It is within these guidelines that the current Navy program is structured.

4. Current Navy Program

a. Duties and Responsibilities

(1) Chief of Naval Material. The responsibilities of the Chief of Naval Material with regard to the WSAM program can be generally viewed from a requirements determination or user orientation. He nominates programs and billets for major command equivalency and identifies those billets to be coded for utilization and development of WSAM designated officers. Additionally, he determines the desired qualifications of the personnel required to manage the myriad elements of the acquisition process as well as the quantity of personnel required. Within the Material Command Organization, the Deputy Chief of Naval Material (Procurement

and Production) acts as chairman of the WSAM Career Management Steering Committee which is tasked to oversee the development and operation of all WSAM Career Programs through review and approval of policies and procedures which are developed by subordinate task groups (Billet Task Group, Career Pattern and Development Task Group, and Evaluation and Ranking Task Group). Coordination and monitoring of the requirements validation process is the responsiblity of the Director of Military Personnel Security Division (MAT052) who is double hatted to the Bureau of Naval Personnel as Pers 44W to provide liason between the user and producer.

(2) Chief of Naval Personnel. The duties of the Chief of Naval Personnel with regard to the WSAM program can be viewed from the developer or producer orientation. He is responsible for selection and designation of the required personnel as well as their education, training, career development and utilization. The responsibility for proper utilization of WSAM coded officers is assigned to the WSAM Subspecialty Development Officer (Pers 403b). He is tasked to work closely with the respective detailers to coordinate assignment of all WSAM officers.

(3) Chief of Naval Operations. Monitoring of the WSAM program is accomplished at the Chief of Naval Operations level by the DCNO (Manpower and Naval Reserve). He is tasked with the responsibility of approving requested Naval Officer Billet Classification codes and subspecialty codes

for designated billets; approving major command equivalency billets; and monitoring system acquisition management personnel requirements.

b. WSAM Subspecialist Selection

Initial screening of aviation officers for WSAM selection occurred in October 1972, however, the first board constituted specifically to select officers from all designators for WSAM coding met in February 1975. In a 9 January letter to the board [Ref. 10] the Chief of Naval Material provided guidelines as to the types of experience, education and training which provide WSAM qualifications and also a set of recommended selection criteria, by rank, to be used as guidance for the Board. These criteria are displayed in Figure 3. The board selected a total of 298 13XX officers for WSAM coding. At the time of selection each officer received one of two Additional Qualification Designators (AQD) - WW1 or WS1. These designators identify the individual either as a fully qualified WSAM (WW1) or a WSAM selectee (WS1). WSAM Selectees are individuals who though lacking certain qualifications at this state of career development have established a track record as a top performer with growth potential. The current pool (January 1977) of designated 13XX officers is depicted in Table II.

Figure 3

Recommended Selection Criteria for WSAM By Rank

LCDR

1. Expressed desire to become a WSAM.
2. Upper half performance demonstrated throughout career.
3. Excellent potential in acquisition management field based on experience and education.

CDR

1. Expressed desire to become a WSAM.
2. Upper half performance demonstrated throughout career.
3. Top performance in at least one challenging assignment (normally at least two years) directly associated with acquisition management.
4. Outstanding potential in project management based upon operational/technical/management experience and education.

CAPT

1. Expressed desire to become a WSAM.
2. Upper half performance demonstrated throughout career.
3. Top performance over an aggregate period of at least four years in one or more challenging assignments directly associated with acquisition management.
4. Qualified (or clearly demonstrated outstanding potential) for assignment as project manager based on operational/technical/management experience and education.

Table II

WSAM Coded 13XX Officers

Rank	AQD WW1	AQD WS1	Total
CAPT	53	14	67
CDR	6	87	93
LCDR	0	87	87
LT	0	13	13

The WSAM Board currently meets on a biennial basis with the next one scheduled for 8 March 1977. Each board accomplishes three tasks:

(a) re-screening of previously selected personnel for upgrading or removal of AQD.

(b) screening of new applicants for WSAM coding.

(c) designation of WSAM selected officers for PG or DSMC Schooling.

This years letter to the board from the Chief of Naval Material will provide more specific guidelines as to the desired qualifications required of WSAM designated officers. The selectivity inherent in this list of qualifications [Appendix D] is indicative of the maturing process that the program has undergone since its inception and represents an important attempt to control the quality of the individuals to be developed as Project Managers.

c. Billet Identification

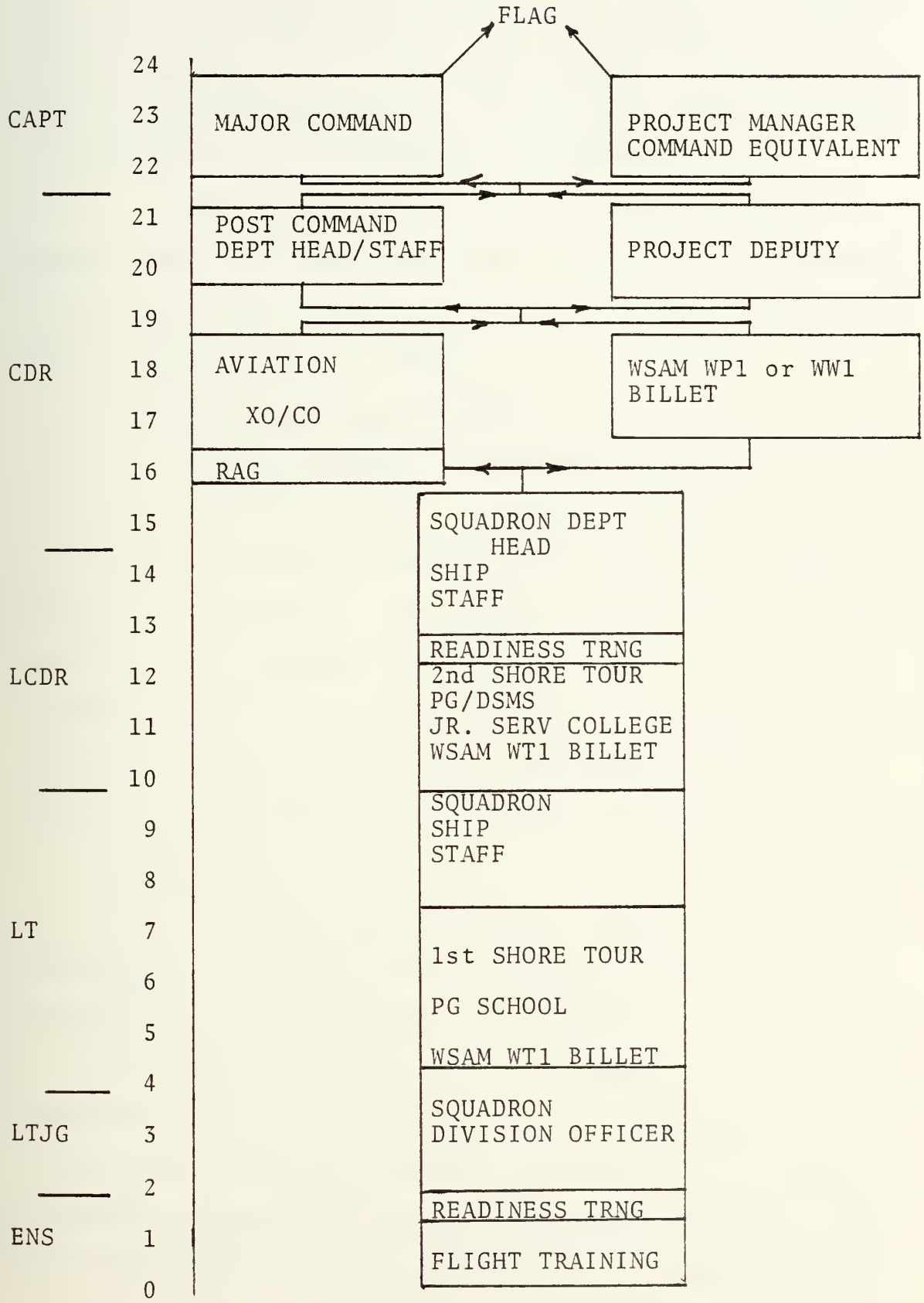
One of the steps necessary in establishing the WSAM community was the identification of the billets to be

utilized in the career development of potential project managers. The WSAM Study Group identified a total of three hundred forty-eight (348) aviation officer billets as part of the original study. There is, however, little indication that the original list was ever fully accepted. It was not until August 1974, that a specific list of billets was officially proposed by the Chief of Naval Material for inclusion in the WSAM program. All these billets were considered to be within the "sphere of influence" of the WSAM program, however, the degree of importance of the billet and the quality of the personnel assigned these billets was to be indicated by a code assigned to them. This coding procedure was accepted and the current WSAM billet structure is arranged according to the following identification hierarchy:

> WSAM Training (WT) - These are billets selected by the Chief of Naval Material in grades 05 and below, which provide meaningful experience in one or more phases of the weapon systems acquisition process. Billets are located in a project management office, in indirect support of one or more designated projects, or other selected positions. Billets are related to technical and financial planning, contracting and administration of contracts, engineering development, operational systems development, procurement or production of weapon systems.
>
> WSAM (WW) - These are normally senior billets in the acquisition management field which are very important to the weapons acquisition management process of one or more defense systems. They include all Project Manager and deputy billets and many others. Personnel selected for these billets are expected to have had meaningful experience in weapons acquisition <u>prior to</u> selection for assignment to WW coded billets.

Figure 4

Career Development Pattern - URL Aviation Officer



WSAM Preferred (WP) - These are usually senior billets but of less relative importance to the weapons acquisition management process than "WW" billets. It would be preferable that these billets be filled by personnel selected as being qualified for a "WW" coded job at that grade but it is not mandatory. The code does indicate that the "quality" of the job is sufficient to warrent that assignment to the billets be limited to those of known quality and potential as evidenced by an established performance record.

It is through assignment to these designated billets that the officer can obtain the necessary experience and establish the required performance record for consideration as a Major Project Manager.

5. Career Development Pattern

Career development in the WSAM field is currently achieved through assignment to experience-qualifying billets in the project management support structure and through education and training. For the URL aviation officer this requires that assignments follow a pattern of development encompassing both the warfare specialty and weapon system acquisition fields. The current development pattern for the URL aviation officer is depicted in Figure 4.

6. Summary

The Weapon System Acquisition Manager Program was implemented as part of the Navy's efforts to improve its management of defense systems acquisitions. It was designed to identify and select a group of officers, regardless of designators, with a specific set of qualifications and to develop these officers through a progression of billets of increasing responsibility and broadening experience. Ultimately the officers so developed were to provide the cadre

from which the Navy's Project Managers were to be selected. It is to this end product of the WSAM Subspecialty System that the next section of this thesis will be address.

B. THE PROJECT MANAGER

1. Introduction

The previous section has portrayed in detail the evolution of the Navy's efforts to formulate a program in career development that would produce as its end product a cadre of officers who possessed the necessary expertise to fill the important role of Project Manager. That there can be no doubt that both the expertise and the role of the Project Manager are important was emphasized by the following statement from the Report of the Commission on Government Procurement [Ref. 11].

> The very difficult task of management of the major system process is both to give the needed special attention to major systems and to integrate the major system activities into the overall responsibility and interdisciplinary nature of the department or agency. The difficulty of this task can be better understood when the very large scale resource commitment of some major systems is considered. The resources required by some major systems are larger than the annual budget of the Executive Branch agencies. The unique nature of major systems large scale resource requirements and high technological content and their importance in realizing the fulfillment of national goals demand special and top level management attention.

In addition, both the Department of Defense and the Congress will always stand ready to question whether or not the Navy is entrusting the management of its weapon and support programs to officers who have the experience and education necessary to meet the difficult cost, schedule, and

performance objectives inherent in managing such programs. In the current era of high competition for resources, the Navy can no longer afford the luxury of "on-the-job" development of its officers in the role of Project Manager. The requisite education experience, training, and skills must be attained prior to assuming the Project Manager job. This section will examine the skills and qualifications required in the role of Project Manager and portray the Navy's methodology and criteria for selecting officers for this role.

2. Characteristic Skills

Project Managers serve as the point of synthesis for the weapon system development effort. As such they are required to levy tasks on organizational elements outside of their direct control and pull together system related activities such as research, engineering, test, production, logistic support and training. Faced with diverse management responsibilities, Project Managers must deal with trade-offs among time, costs, technical risks, uncertainty, schedule delays, financial shortages and a host of other problems. In addition to managing the complexities of his project he must also serve as the agent of the Navy in the political and budgetary arena and provide the major motive force to propel the system through the acquisition process. Thus the individual assigned to manage a complex technical project is quickly entrenched in a net of numerous requirements. Traditional methods of leadership, management and

organization must often be modified as the Project Manager tries to struggle with the numerous problems which envelop and encompass his job. In coping with his unconventional environment the Project Manager will find relatively little written guidance in the vital techniques of persuasion, salesmanship and infighting. It becomes readily apparent then that certain personal qualities may hold the key to the individual's success in the project manager role and if these qualities are the Project Manager's strengths they would contribute significantly to his overall performance as an effective project manager. A significant amount of research has been conducted in an attempt to identify these key skills.

Brigadier General Winfield S. Scott III (USA), past commandant of the Defense Systems Management School, began his article on "Educating the DOD Program Manager" [Ref. 12] with a list of eight characteristics essential to success in a career in project management.

> Must be honest, dedicated, and empathetic with his superiors, subordinates and peers.
>
> Must have common sense and confidence in himself.
>
> Must be educated and experienced.
>
> Has to be an innovator, opportunity finder, and problem isolater and solver.
>
> Must be sophisticated militarily and attuned to the political-social-economic environment in which he operates.
>
> Must be tough, respected and have courage, recognizing that when he is with the concensus he probably isn't leading - and when he is leading he will be uncomfortable because he has to be doing the right thing.

Has to be at home in "unstructured" situations.

Must be himself because he cannot be anybody else and must capitalize on his personal strengths and minimize his weaknesses.

The Giacoppe Study of one hundred and fifty-four Project Managers and Deputy Project Managers [Ref. 13] also attempted to identify key profile elements that led to successful project management. A list of eleven (11) profile elements were assembled from a review of management literature and the relative importance of each skill was determined through survey and interviews. An ordered ranking of the eleven elements is presented in Table III.

Table III

Profile Elements

Rank	Profile Element
1	Ability to identify problems
2	Overall high communicative skills
3	Ability to think imaginatively
4	Ability to think in the broadest range possible
5	Technical ability to analyze complex problems
6	High ability in interpersonal relations
7	Ability to interface with high ranking officers
8	Ability to write and present issues clearly
9	Ability to brief frequently and well
10	High persuasion ability
11	Ability to apply regulations and standard operating procedures

This list ordering has never been repeated, however, since later studies by Tomes in 1973 and by the Defense Systems Management School in 1974 using students and graduates of the Program Management Course given at the Defense Systems Management College produced significantly different rank orderings except for the most important element - ability to identify problems - which was ranked number 1 on all the studies [Refs. 14 and 15]. The rank orderings resulting from these studies is presented in Table IV.

Table IV

Profile Elements

Tomes Study	DSMC* Study	Profile Element
1	1	Ability to identify problems
Not Inc	Not Inc	Overall high communicative skills
2	6	Ability to think imaginatively
7	8	Ability to think in the broadest range possible
8	9	Technical ability to analyze complex problems
Not Inc	Not Inc	High ability in interpersonal relations
4	3	Ability to interface with high ranking officers
6	2	Ability to write and present issues clearly
5	5	Ability to brief frequently and well
3	7	High persuasion ability
9	10	Ability to apply regulations and standard operating procedures

*Ranked fourth on the DSMC Study was leadership ability.

Finally as part of this thesis research a questionnaire consisting of twenty-five leadership and management skills determined to be representative of important characteristics of managerial skill, competence and knowledge was administered to thirteen (13) of the fourteen (14)

unrestricted line aviation officers currently serving as Project Managers. From these questionnaires a list of the ten most important skills required in the role of Project Manager was compiled. This list is presented in Table V.

Table V

Leadership and Management Skills

Rank	Skill
1	Identifying Problems
2	Taking initiative
3	Team Building
4	Respect for Others
5	Setting Goals
6	Management Control
7	Resolving Conflict
8	Critical Thinking
9	Planning
10	Being Flexible

It became readily apparent as the studies cited here were compared between and among each other as well as with others in the literature [Refs. 16, 17, 18] that no one list of distinctive qualities was available. This observation coupled with the fact that the only current measure of an officer's performance - the fitness report - is operationally oriented and does not adequately measure managerial skills, Reference 19, indicated that the use of traits in the

selection of Project Managers would provide an unreliable indication of successful performance. What can be summarized from the available research is a generalized profile of the successful manager. He must be action oriented and able to maintain a high rate of activity. He must be capable of assimilating a wide variety of information and dispersing it to his organization or calling on it for his decision making. He must be able to communicate verbally in a clear and concise manner. Finally, he must be an opportunist who understands the managerial system and is able to exploit both the situations which occur unexpectedly and the long term commitments which he has developed.

3. Qualifications

Lacking any reliable measure of success skills, the Navy's major efforts to select and develop better Project Managers has centered on providing education, training and experience tours by which highly motivated officers are able to develop the expertise required in the demanding role of Project Manager. The types of education, training and experience that are pertinent to the role of Project Manager have been the subjects of extensive research and an on going iterative refinement process. As part of the early WSAM Study Group efforts, a survey of those individuals then involved in the system acquisition process was conducted in an attempt to define the optimum qualifications of a Project Manager. The results of this survey formed the basis for the guidance given to the first WSAM Subspecialty Board

convened in 1972 with regard to the desired qualifications for Project Manager. The important qualifications desired at that time are depicted in Appendix C. The results of the WSAM Study survey were updated by Loftus and Allen in 1973 in a survey of both restricted and unrestricted line officers in the project management field [Ref. 20]. Their study showed a consensus between the two groups which supported the conclusions of the 1969 WSAM survey.

a. Experience and Education

The following order of preference was indicated:

(1) Two tours operational experience, MS Technical degree

(2) Strong operational experience (3 or more tours), BS Technical

(3) Two tours operational experience, MS Non-Technical

(4) Strong operational experience - BS Non-Technical

(5) Two tours operational experience - BS Non-Technical

b. Educational and Functional Training

The following preference order was indicated:

(1) MS Technical degree - Management function training

(2) MS Systems Acquisition Management - Nuclear Power/ Test Pilot Training

(3) MS Technical degree - no management training

(4) MS Systems Acquisition Management - no technical training

(5) MS Non-Technical degree - no technical training

c. Tour Assignments

No agreement could be reached as to first tour assignments but they had the following preference for second tour.

(1) Principal Assistant Project Staff (Prior Washington tour)

(2) Principal Assistant Project Staff (Prior Field Tour)

(3) Naval Plant Representative (Prior Washington Tour)

(4) Test Center (Prior Washington Tour)

(5) NARF/Shipyard (Prior Washington Tour)

In his letter to the Aviation Captain Command Selection Board dated 23 September 1976 [Ref. 21], the Chief of Naval Material presented the most recent iteration of the important qualifications for project managers. The only significant change in the list of desired qualifications occurred in the area of acquisition experience. In addition to the previously defined eight years of experience, the further requirement of at least one tour within the last five years as a member of the Project Office Team was now considered mandatory. This requirement is indicative not only of the gradual maturing of the WSAM program but also a realization that familiarity with a specific project is of equal importance with broad acquisition experience. It is through letters such as these that the requirements of CNM are presented to the Chief of Naval Personnel for use by the Captain Command Selection Boards.

4. Selection

Project Managers are selected by three separate community oriented selection boards: Aviation, Surface/Submarine, and Restricted Line/Staff Captain Command Selection Boards. These boards composed of Flag Officers select a list

of officers from which the Commanding Officers of the Navy's Major Commands are chosen. In particular, the Aviation Captain Command Selection Board is tasked with preparing three such lists: Sea Command, Shore Command and Major Project Manager. Detailed guidance and selection criteria, as previously indicated, is provided by the Chief of Naval Material to aid the board in selecting those officers for the Major Project Manager List. There is, however, no rigid set of criteria used, as can be seen when one examines the profiles of Project Managers selected by the FY-75 and FY-76 Aviation Selection Board. These profiles are presented in Figure 5.

Figure 5

Profiles

Aviation Project Manager Selectees

FY-75/76

Type Squadron Experience	8 - VF/VA 8 - ASW 2 - other
Commanding Officer Tour	16 of 18
Bonus Command	4 of 18
Attended Naval Postgraduate School	10 of 18
Masters Degree (Engineering)	12 of 18
Masters Degree (Management)	5 of 18
Dual Masters Degree	3 of 18
War/Staff College	10 of 18
Test Pilots	7 of 18
Average NAVMAT Experience	3.9 years
Asst/Deputy Project Manager Tours	6 of 18
Proven Subspecialist	12 of 18
WSAM Selectees	5 of 18

The significance of this profile data will be discussed in Chapter IV and is presented here to simply illustrate the output of the current selection process.

When a need for a manager for a particular major project becomes known, the Commander of the Systems Command concerned, with the assistance of the Chief of Naval Personnel, nominates an officer from the Major Project Manager List whose experience, education and training background best fits the requirements of the project. The Chief of Naval Material personally interviews all new candidates for Major Project Manager assignments. If approved, CNM endorses the proposed nomination to the Chief of Naval Personnel and provides copies to the Chief of Naval Operations and the Secretary of the Navy. The current tenure of assignment goal is four years with extensions as appropriate to provide for transfers at appropriate stages in the project.

C. SUMMARY

This chapter has endeavored to depict the Navy's program of career development for project management. It has traced the original studies through implementation up to the current organization of the WSAM Subspecialty Program. In addition, it has examined the qualifications and selection of the Navy Project Manager. The next chapter will examine the career development of the URL aviation officer by examining the normalized model currently utilized by the Bureau of Naval Personnel. In Chapter IV the two career programs WSAM and

13XX URL - will be integrated and the problems associated with that integration will be discussed.

III. CAREER DEVELOPMENT OF THE AVIATION WARFARE OFFICER

A. INTRODUCTION

A career in the Navy may be defined as a progression of billet assignments that are designed to levy a continual increase in the level of responsibility upon the officer as he proceeds along the progression. Each assignment should utilize past experience, training and education and should develop and expand the individual's experience base for future assignments. The purpose of such a career progression to the Navy is to assure that enough highly qualified officers are available and promoted to responsible positions. Its goal therefore must be the development of the individual to his highest potential without regard to any specific end-points in development.

The specific factors involved in the career development process at any given time are driven by the needs of the service for specific skills and experience. These needs are constantly changing as new technology is introduced or problems occur. To respond to these requirements the Navy must continually retrain officers already in the inventory. Driven by this ever occurring adjustment, career development plans must be designed around a flexible pattern of potential assignments. Tour lengths, billets, training and timing of assignments all become variables in a very dynamic process and therefore it is the sequence of assignments that provides

the necessary development. Operating within this environment then, a career development plan within the Navy may be defined as a program that places assignments in a progression of responsibility and establishes milestones as to when in the progression these assignments should occur.

Career development plans are developed within the Bureau of Naval Personnel for each Warfare community in the Service. Subsets within a specific Warfare community are dealt with on an exception basis with allowances made for the unique requirements of a particular subcommunity. This chapter will deal only with the normalized career development plan for the unrestricted line aviation officer. Information displayed in these sections is based on the data available at the time of research and due to the dynamics of this process, the relationships drawn from this data must be weighed in the future against the most recent information.

B. NORMALIZED CAREER DEVELOPMENT PLAN

The unrestricted line aviation warfare community is made up of officers designated as Naval Aviators or Naval Flight Officers (NFO). These officers are further divided among the various mission/warfare areas such as: fighter, attack, anti-submarine warfare (ASW), reconnaissance, etc. In addition, mission or warfare communities may be further divided such as: light and medium attack, land based or carrier based AWS, etc. To discuss each sub-community, with its peculiar requirements, would be beyond the scope of this research, therefore, only the career development plan

of the Service as it applies to the total community will be portrayed. Further information with regard to the specific details of any particular aspect of the discussion that follows may be obtained from the Unrestricted Line Officer Career Planning Guidebook published by the Bureau of Naval Personnel [Ref. 22].

1. Aviation Training

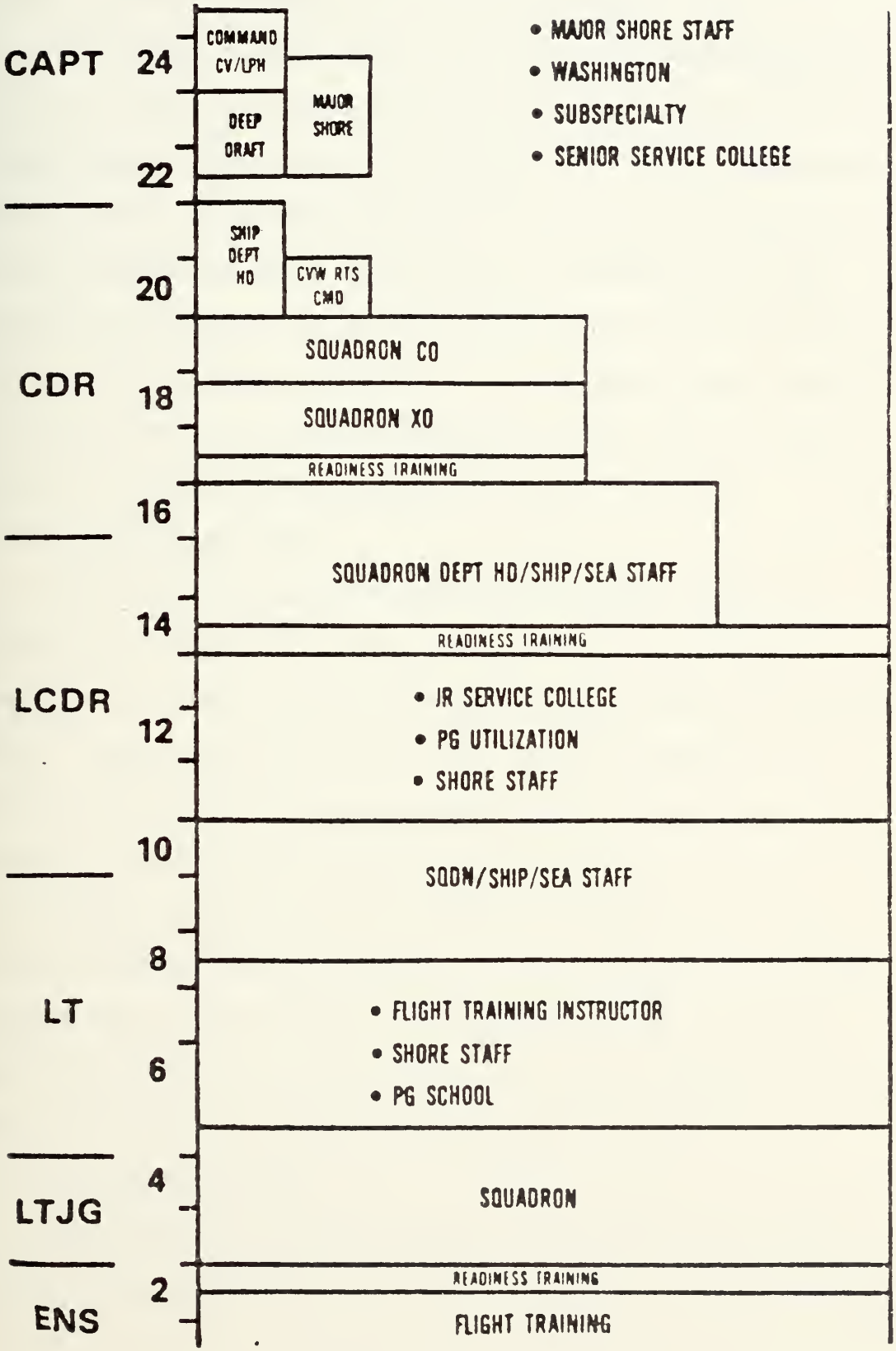
All pilots and NFO's begin their career development at the Aviation Schools Command where determination is made based on competitive performance evaluation and desires of the individual as to the general type aircraft a pilot will fly and the actual aircraft type in which an NFO will serve. This determination will likely remain with the aviation officer throughout his Naval career. Although pilots and NFO's may eventually serve together in an operational squadron, they undergo distinct training programs. They may be reunited, after receiving their wings, at the Fleet Readiness Squadron (FRS) where they will receive training in the actual operational fleet type aircraft they will fly.

2. First Sea Tour

After graduating from the training command and the FRS, the responsibilities and milestones in the career development of the aviator and NFO are essentially the same. The most recent career development plan obtained from the Officer Professional Development Division of the Bureau of Naval Personnel is depicted in Figure 6. It is important to stress that the career pattern depicted represents only

Figure 6

Aviation Officer Professional Development Path



a general aviation career progression. Completion of the steps outlined in the diagram in no way assures success; nor does pattern alteration preclude success.

The initial squadron tour lasts for approximately 2-1/2 to 3 years. Initial billet assignment will usually include branch officer and/or division officer. Experience will be gained in leadership and in personnel utilization and this experience will serve as the foundation of the managerial experience to be more fully utilized in future stages of development. Performance evaluation will depend to a large part on professionalism in the air and responsibility in the billet assigned.

3. First Shore Tour

The numerous billets available to the aviation officer ashore may be loosely grouped into three major categories: flying billets, staff billets, and educational billets. Approximately 30% of the aviation officers who have been selected for postgraduate education will be so assigned. Completion of graduate level education will result in the officer being assigned a subspecialty code. Pay back touring for utilization in that subspecialty area for which the education was obtained has become extremely important and current policy dictates that it should occur within two tours of the education tour.

4. Second Sea Tour

The aviation career pattern departs at this point from what has been the accepted norm for many senior aviators.

Whereas it was once normal for aviators to receive three operational tours prior to command, it is now unlikely. Due to the limited number of aircraft and the reduced number of flying billets available for aviation officers in fleet squadrons, two operational tours is more likely the norm. For this reason, alternate second tour sea duty has been established for all aviation officers. This sea duty is primarily aboard aircraft carriers and in the afloat staffs which support the aviation effort. To alleviate the hardship imposed on the aviation officer by serving in these billets the tour has been shortened to two years. Acceptance of a second squadron tour at this point in the career progression must be given careful consideration. Inability to obtain a third squadron tour and the importance of a tour in a department head billet combine to constrain the second operational tour to one in which a department head position may obtain. It must always be remembered that from the ranks of the most successful department heads come the future aviation commanding officers.

5. Second Shore Tour

Many of the assignment opportunities are similar to those of the first shore tour with the following differences:

(a) assignment to a flying billet may become a function of the total flying time obtained to date.

(b) subspecialty utilization may be required.

(c) The opportunity exists for attendance at a service college. This is decided by screening on promotion to LCDR. Opportunity for attendance is approximately 40%.

This tour normally lasts for 3 to 3-1/2 years.

6. Squadron Department Head Tour

This is usually the third sea tour and second squadron tour. The successful execution of department head responsibilities is the final test of leadership and management skills prior to command selection. The fitness reports received during this tour will be considered very carefully by the aviation command screening board.

7. Aviation Command

This tour is the result of selection board action. The Aviation Command Screen board reviews the records of all aviation officers in the year groups under consideration at the time. Current policy dictates that each year group is looked at four times beginning in the 13th year for operational and special mission - Aviation Command Selection. Command opportunity, defined as the opportunity for an unrestricted line officer to have at least one screened command in grade, is the ratio of the average (over five years) number of commands for which command screened officers are required each year compared to the average (over five years) year group size on board shortly after selection. In recent years, this number has been between 60 and 65%. This is the overall average for the whole community; opportunity within the various subcommunities is generally a function of the size of the subcommunity. The number also includes ashore commands and training squadrons and therefore, does not portray the opportunity for operational squadron command which may be significantly less. The command tour, which includes the time spent as executive officer, runs from 24 to 30 months.

8. Post Command

It is in these assignments that the viability of multiple career paths attains. There are only limited opportunities for future aviation commands but almost limitless opportunities to utilize the experience obtained in the operational arena. There are a variety of responsible and demanding operational and staff billets. Many of these jobs are in Washington, D. C. and the probability of assignment to the Nation's capital increases with seniority. In fact, history indicates the benefit of serving in the Washington area prior to facing selection for Captain. In recent years the selection opportunity for Captain within the aviation community has been approximately 48% with command opportunity at the Captain level averaging 28%. This opportunity is disproportionately low due to policies which assign officers to more than one screened command in grade.

This normalized career development plan contains a variety of career paths that are dependent primarily on the education, training and experience obtained within the plan. Among these career paths, it is anticipated that to satisfy the Navy's need for specialized talent in the non-operational functions of the Service about 50 percent of the aviation unrestricted line officers will become involved in a secondary career field or subspecialty. Both groups will migrate in and out of the pure operational role and it is for the management of the degree of operational versus subspecialty

involvement of the subspecialty officer that the Operational Technical Managerial System (OTMS) was established.

C. CAREER MANAGEMENT SYSTEM

The Operational Technical Managerial System (OTMS) was established in the Bureau of Naval Personnel in the summer of 1972. It is a career management system for all URL officers which has as its purpose the development of a URL officer's strong operational background while concomitantly fostering technical and managerial expertise. The degree of involvement in these areas is the variable. Within the dimensions of experience and education and the variation in the involvement between operational and subspecialty fields, many unique career paths are available and a greater option of assignments are made available to the individual.

In the past, subspecialization was primarily a function of postgraduate education. Under the OTMS concept an additional opportunity is provided to specialize in a given field through experience and exposure. The Officer Subspecialty System is promulgated and discussed in OPNAVINST 1211.6E.

Under the subspecialty aspects of OTMS, A Subspecialty Monitoring Branch has been established at the Bureau of Naval Personnel. This branch monitors the detailing process for subspecialists and attempts to provide the optimal progression of assignments for subspecialty development, Its goal is to achieve a balance between operational and

subspecialty growth, by concentrating on better utilization of officers available for assignment in shore duty subspecialty billets.

In order to recognize performance in subspecialty fields, a system of subspecialty selection boards have been initiated. By board process, those officers with the requisite experience, professional performance and technical/managerial expertise in specific subspecialization areas will be designated as proven subspecialists. This designation will identify to other selection or promotion boards, those officers whose performance within a given subspecialty mark them as of significant value to the Navy.

The key aspects of the OTMS system can be summarized as: operational development, subspecialty identification, subspecialty development, and proven subspecialist designation. Through this process the Navy attempts to achieve greater utilization of its technical and managerial talent without limiting the career potential of the individual.

This section has outlined the management process used by the Bureau of Naval Personnel to aid in the career development of the unrestricted line officer. As indicated at the beginning of this chapter, however, a career is both a progression of assignments and a series of milestones which must be met along the progression. The next section will discuss the major milestones that impact the aviation officer's career.

D. CAREER MILESTONES

1. Promotion Opportunities

The legal and administrative steps in officers promotions, beginning with the establishment of an officer's eligibility for consideration and ending when a promotion to next higher grade actually is effected, may be described as a cycle. Within this cycle are three major elements: eligibility, selection and promotion. The first element is fundamentally a function of time in service; the second a function of performance and the third depends heavily on ranking within the promotion zone and administrative procedures. Each element is further controlled by various laws and regulations.

Promotion opportunity is also the product of the interplay of three factors:

(a) Prescribed Number - the number of officers of a particular category specified for a grade or combination of grades.

(b) Promotion Flow Point - the number of years of commissioned service at which most officers would be promoted to the next higher grade.

(c) Promotion Percentage - the number of officers to be selected divided by the number of officers in the promotion zone.

These three factors are interrelated and cannot be divorced from each other. A change in one will force a change in at least one of the others.

At least once a year, as prescribed by law, the Secretary of the Navy, establishes the numbers of unrestricted line officers and limited duty officers of the line combined,

who may be serving in each of the various grades. From these authorized numbers, known and expected vacancies are measured. The determination of the number which may be promoted each year to fill such vacancies is made by the Secretary of the Navy.

The second factor, promotion flow point, refers to completed years of commissioned service. The present flow points for officers considered in the promotion zones for the next higher grades is depicted in Table VI.

Table VI

Grade Promotion Flow Points

Rank	Years Commissioned Service
LTJG	2
LT	4
LCDR	9-10
CDR	15-16
CAPT	21-22

The third promotion opportunity factor, promotion percentage, is actually a preconceived number that is used with the number authorized for promotion to determine the size of the promotion zone. The current authorized percentages for the Unrestricted Line Community are depicted in Table VII [Ref. 23].

Table VII

Unrestricted Line Promotion Opportunities

Rank	Percentage
CAPT	60%
CDR	70%
LCDR	75%
LT	95%

Various communities may differ from these overall guidelines and for the aviation community promotion percentages for the last six fiscal years are depicted in Table VIII.

Table VIII

Aviation Officer In-Zone Promotion Percentage*

	Rank		
FY	LCDR	CDR	CAPT
1972	75.6%	55.3	48.0
1973	60.3	67.6	39.2
1974	62.1	56.5	48.7
1975	63.8	52.5	47.7
1976	58.3	63.9	46.3
1977	67.0	68.2	49.0

*In Zone Promotion Percentage = the number selected from within the zone divided by the number eligible in the zone.

The promotion pyramid narrows considerably near the top and, on the average, only thirteen (13) Aviation Captains are promoted to Flag rank each year.

For each promotion point, performance is the key to selection, however the importance of a command tour as a milestone along the career progression cannot be understated.

2. Command Tour

The single most important distinguishing factor in the career development program of the unrestricted line officer is eligibility for command-at-sea. All initial training and qualification in a warfare specialty is oriented toward assumption of that responsibility. The first third of a career is devoted to increasing operational professional competence and all future growth remains rooted in the operational background. The importance of performance in the operational area cannot be more emphatically illustrated than when one examines the impact of the command selection milestone on career progression. This impact is especially pervasive in the aviation community. With initial screening for command occuring in the thirteenth year, the significant criteria for selection can only be performance in the operational area since little time has been spent in other than operational tours at this point in the career progression. One of the significant elements of the overall performance appraisal is the tour as a squadron department head where, in addition to professional leadership in the air, operationally oriented managerial

ability may also be assessed. Based on this operational performance appraisal, recent statistics for the aviation community indicate that 60-65% of those selected to the rank of Commander will have the opportunity for one screened command in grade [Ref. 24]. The importance of this command screening milestone to future career progression is then illustrated when one examines the statistics for selection to Captain. In an analysis of promotion data up to 1971, a study done at the Naval War College [Ref. 25] indicated a selection rate to Captain among non-command screened aviation officers of approximately 6%. Recent analysis of the in-zone promotion data for the fiscal years 1976 and 1977 shows an overall slight improvement in this rate for the period. These data are presented in Table IX.

Table IX

In-Zone Promotion Rate - 13XX Captain

	Overall			Non-Command			Prior Command		
	ELIG	SEL	%	ELIG	SEL	%	ELIG	SEL	%
1976	393	182	46.3	157	17	10.8	236	165	69.9
1977	296	145	49.0	98	7	7.1	198	138	69.7

As indicated, selection for command does not insure further promotion, however, non selection exacerbates further promotion potential as an unrestricted line aviation officer. It is for this reason then that competitiveness for command must pervade the career orientation of the aviation officer. This milestone can become a determinent

for progression from middle management to executive management billets. The impact of this milestone on career development for project management will be examined in Chapter IV.

3. Aviation Career Incentive Act

On May 31, 1974 additional milestones were placed in the career development of the aviation officer by Public Law 93-294 "Aviation Career Incentive Act of 1974" [Ref. 26]. Enacted by the 93rd Congress, this law amended Chapter 5 of Title 37, United States Code, to provide new regulations governing the payment of aviation career incentive pay commonly known as "flight pay". As part of these new regulations, milestones or "gates" were established that governed the entitlement to flight pay. Specifically the Act required that:

> To be entitled to continuous monthly incentive pay an officer must perform the prescribed operational flying duties (including flight training but excluding proficiency flying) for 6 of the first 12 and 11 of the first 18 years of his aviation service. However, if an officer performs the prescribed operational flying duties (including flight training but excluding proficiency flying) for at least 9 but less than 11 of the first 18 years of his aviation service, he will be entitled to continuous monthly incentive pay for the first 22 years of his officer service. If upon completion of either 12 or 18 years of aviation service it is determined that an officer has failed to perform the minimum prescribed operational flying duty requirements during the prescribed periods of time, his entitlement to continuous monthly incentive pay ceases.

A review of aviation officer records to credit aviation service prior to 1 June 1974 [Ref. 27] indicated that the expected failure rates for the 13XX aviation

officer would be one percent at the 12 year gate. Current indications are that this failure rate is slightly higher (2-3%). It was felt at that time that current career patterns were compatible with the new legislation. The impact of the impending lengthening of shore duty tours to a minimum of three years, however, has created pertabations throughout the system which have not been fully assessed. In addition, the impact of the Act on subspecialty utilization must also be assessed. What is known is that an aviation officer must serve in two operational flying tours in the first 12 years of aviation service and over 3 tours in the first 18 years of aviation service in order to retain entitlement to aviation career incentive pay for 25 years. Three tours are required to retain entitlement for 22 years. The impact of this "gate" system on the career development of the aviation officer as a WSAM subspecialist will be discussed in Chapter IV. A copy of the Aviation Career Incentive Act is provided in Appendix E.

E. SUMMARY

This chapter has portrayed the current career development plan for the unrestricted line aviation officer. Three important milestones in that career progression have been identified: promotion opportunity, command selection and the Aviation Career Incentive Act. The previous chapter identified the program established to identify, select and develop officers for the important program manager jobs in the Navy. In addition the desired qualifications for a

program manager were also portrayed. Chapter IV will attempt to draw these two discussions together by examining the impact of attempting to overlay the career development program for program manager upon the normalized career development pattern of the aviation officer. Constraints imposed on the career development of the WSAM selected aviation officer will be examined and recommendations for development of a viable career program will be developed.

IV. CAREER DEVELOPMENT PLAN FOR THE WSAM DESIGNATED AVIATION OFFICER

A. INTRODUCTION

Unlike some foreign navies, the U.S. Navy long ago rejected the concept of sole strict division into various corps of specialists - each composed of experts in its own field and each restricted to the performance of duty in that field. Though some Restricted Line Corps exist, traditionally, the Unrestricted Line (URL) Aviation Officer has been expected to be well rounded in all areas of the Naval Service by virtue of training and experience. As Naval technology became increasingly complex, however, an additional requirement was added. That requirement was for the URL officer to acquire a field of subspecialization.

In the previous chapters the WSAM subspecialty career development program for project managers and the career development plan for the unrestricted line aviation officer were described. In each instance, certain criteria and milestones were identified as being critical to development in each respective field. These criteria/milestones were:

PROJECT MANAGER

- technical and managerial education preferably at the Masters level
- operational experience
- 7-8 years of WSAM related experience

AVIATION OFFICER

- Aviation Career Incentive Act
- Promotion
- Command

For the URL Aviation Officer faced with the decision of pursuing a career encompassing the WSAM subspecialty and culminating in eligibility for selection as a Project Manager, these criterial/milestones become requirements that must integrated into a viable career development plan. It is the purpose of this chapter to examine if these requirements can be integrated into such a plan and to identify the constraints or conflicts that may develop.

It is assumed at the outset that each requirement is fixed and essential to the required development. The conflicts that this assumption creates in designing a career development plan are then identified. Each requirement is analyzed to determine the constraints it places on the career development plan and the sensitivity of the plan to those constraints. It must be emphasized that the assignment, placement and career progression process is extremely complex with an almost infinite number of possibilities. However, the objectives which have been identified are sufficiently universal as to be applicable to the total community under consideration. The use of normalized career paths to determine the conflicts imposed on the career development of the aviation officer only aids in identification and assessment and is not meant as a

representation of problems to be encountered by all officers. The conflicts addressed and alternatives suggested are universal enough that they should be considered as possible constraints on any particular career development plan and must be reassessed throughout a career program.

B. NORMALIZED CAREER DEVELOPMENT PLAN

The period of career development under consideration encompasses the years from commissioning as an Ensign until promotion to Captain and selection as Project Manager currently occuring in the twenty-first to twenty-second year. During this period, career development in both the aviation warfare specialty and WSAM subspecialty occurs through a series of job assignments associated with the respective fields. Each of these assignments utilizes a designated number of years during the total career development period and is expected to satisfy the requirements of the career development plan.

1. Aviation Warfare Specialty Development

As indicated in Chapter III, all aviation officers are required to complete flight training prior to receiving their warfare designation. In addition, according to the current development plan (Figure 6, Chapter III) for the URL aviation officer, it is expected that each officer will receive two squadron tours and one disassociated sea tour prior to assuming command. The command tour must be included in the development plan because of its apparent

importance to further promotability. The number of years currently required to complete the tours in question are depicted in Table X.

Table X

Aviation Warfare Specialty Development

Tours*	Years
Flight Training	1.5
Operational Squadron	3.0
Sea Tour	2.0
Operational Squadron	3.0
Commanding Officer	3.0
Total	12.5

*Each squadron tour includes approximately six months of Fleet Replacement Squadron Training.

Although this breakdown does not indicate a sufficient number of years of operational flying (10.5 years) to satisfy the eleven years out of eighteen years aviation service gate of the Aviation Career Incentive Act, it does satisfy the nine year gate. Further the 10.5 years of operational flying may be considered as a worst case example since no consideration was given to flying credit received in shore based billets or during the sea tour. Therefore, for the purpose of this analysis a period of 12.5 years is considered reasonable for warfare specialty development.

2. WSAM Subspecialty Development

Since operational experience is a subset of WSAM subspecialty development as well as warfare specialty development, no further time has been allocated for this requirement under WSAM development. The only relevant time consuming considerations for WSAM subspecialty development, therefore, are the years spent in attaining the desired education and acquisition experience. The time allocated for attainment of a Master's degree was determined from a review of the WSAM related curricula offered at the Naval Postgraduate School [Ref. 28]. The two year period represents an approximate mean duration of the courses currently offered. The time allocated to WSAM experience is the minimum desired experience expressed in the letter of the Chief of Naval Material to the FY 1977 Aviation Captain Command Selection Board [Ref. 21]. The total time allocated for WSAM subspecialty development is depicted in Table XI.

Table XI

WSAM Subspecialty Development

Tours	Years
Postgraduate School	2.0
WSAM Experience	8.0
Total	10.0

3. Overall Development Constraints

The total number of years required for complete career development of the WSAM designated aviation officer under a plan designed to meet all the requirements of both the specialty and subspecialty careers would require 22.5 years and would utilize the total development period from Ensign to Captain. As such, the plan does not allow time for tours in other assignments normally considered desireable to career development and promotability, such as junior or senior service college. In addition, no provision exists for bonus operational command tours or, in fact, any operational tours beyond the initial Commanding Officer tour and prior to selection as Project Manager. Representative career plans for the WSAM designated aviation officer incorporating all the desired qualifications and milestones are depicted in Figure 7. Plans are shown for both technical and managerial postgraduate education. In the technical degree plan, the proposed assignments for the first and second shore tours are interchangeable. In the management degree plan, however, the proposed assignments for the first second shore tours can be interchanged only by shortening the length of the indicated pay back tour to 1.5 years or by insuring that such a tour occurs in a WSAM related flying billet. This is necessary in order to insure compliance with the requirements of the Aviation Career Incentive Act. The progression of the promotion and command selection process is also depicted in order to portray how these

Figure 7

WSAM AVIATOR CAREER DEVELOPMENT PLAN

PROMOTION		TECHNICAL DEGREE	MANAGEMENT DEGREE	SELECTION
	23			
CAPT	22			
	21	WSAM	WSAM	PROMOTION BD.
	20			
	19			
CDR	18		XO/CO	
	17	XO/CO		
	16			
	15		SQUADRON DEPARTMENT HEAD	PROMOTION BD.
	14	SQUADRON DEPARTMENT HEAD		
LCDR	13		PAY BACK TOUR	FIRST COMMAND SCREEN
	12			
	11	WSAM FLYING BILLET	PG SCHOOL	
	10			
	9		DISASSOCIATED TOUR	PROMOTION BD.
	8			
	7	DISASSOCIATED TOUR	WSAM FLYING BILLET	
LT	6	PG SCHOOL		
	5			
	4			PROMOTION BD.
LTJG	3	OPERATIONAL SQUADRON	OPERATIONAL SQUADRON	
	2			
ENS	1			
	0			

milestones interface with the presented career development plans. While the depicted career development plans indicate the ability to integrate both the warfare specialty and WSAM subspecialty program, such career plans would require exceptional motivation and dedication on the part of the individual officer, significant revisions in the current processes of career management, as well as, a major change to the current operational orientation of selection and screening boards and are, therefore, considered desireable but not feasible <u>in the current environment</u>. The next section will examine each requirement separately to determine its specific impact on and importance to the development of a viable career plan.

C. REQUIREMENTS ANALYSIS

1. Aviation Career Incentive Act

The Aviation Career Incentive Act (ACIA) of 1974, Appendix F, superimposed certain defined legal constraints upon the career development of the aviation officer. As previously indicated in Chapter III, the Act requires that all aviation officers complete six years of operational flying in the first twelve years of aviation service and nine to eleven years of flying in the first eighteen years of aviation service in order to qualify for continuous aviation career incentive pay through at least twenty-two years of service. Failure to satisfy either the six or nine year "gate" could result in the loss of $2940 per

year for each year that an officer occupied a non-operational flying billet.

Though the normalized career development plan would provide ample opportunity for accumulating the required years of operational flying, the timing of that accumulation in the first twelve years will be critical. During this period, one operational squadron tour, one disassociated sea tour and two shore tours can be expected. One of the ramifications of ACIA on the assignment to billets for either specialty or subspecialty development during this period is that either the disassociated sea tour or one of the shore tours must be to a billet involving operational flying in order that the six year "gate" can be satisfied. Since less than 20% percent of the designated billets afloat for Lieutenants and Lieutenant Commanders involve operational flying, the majority of aviation officers will satisfy the requirements of ACIA through assignment to operational flying billets ashore. The implications of this policy, therefore, will be felt primarily in the subspecialty development area which occurs almost exclusively during ashore assignments.

For WSAM subspecialty development in particular, the ramifications of this assignment policy will be experienced primarily in the areas of subspecialty education and utilization. The attainment of a Master's degree, an important aspect in WSAM selection and development, is usually accomplished during either the first or second shore tour

although current policy is oriented heavily toward the first tour. Once a subspecialty code is achieved via education significant pressure exists under the OTMS concept to insure that the coded officer is utilized in his subspecialty. Such utilization benefits both the individual and the WSAM program by providing for practical development of the education received and training toward future more demanding jobs in the subspecialty program. However, this development process may be shortened significantly unless sufficient subspecialty developmental billets involving operational flying exist within the system. Since less than 15 percent of the billets in the Material Command and various Systems Command Headquarters involve operational flying, heavy reliance must be placed on the various field activities for development of the requisite expertise and particular attention placed on the identification of experience qualifying flying billets in these activities. Otherwise valuable training and experience time might be lost while a potential WSAM officer serves in a non WSAM associated billet simply to satisfy the requirements of ACIA.

The requirements of ACIA also place a constraint on the utilization of the aviation officer in a pay back tour immediately following the completion of postgraduate education during the first shore tour. In order to satisfy the requirement for 6 years of operational flying in the first 12 years of aviation service, the immediate pay back tour would have to be limited to 1-1.5 years,

depending on postgraduate curriculum, for a non-operational flying assignment. Even in a WSAM related flying assignment, tour duration, it is felt, would have to be limited to 2 years. This is to insure that the phasing of future assignments is consistent with the promotion and screening process.

The constraint imposed on the career development plan of the WSAM designated aviator by the Aviation Career Incentive Act consists primarily of restrictions placed on assignment flexibility and affects most heavily subspecialty development. This constraint can be met, however, if sufficient importance is placed on identifying billets that satisfy both the operational flying and WSAM experience criteria. An alternative approach would be to insure that WSAM designated officers were assigned to operational flying billets during their disassociated sea tour. This would enable the achievement of the flying gate requirement during at sea tours and would allow greater flexibility in the assignment of the WSAM officer during his ashore tours. Inherent in such a policy, however, is the necessity to identify potential WSAM officers much earlier than is current policy and to practice much closer monitoring of individual career programs than is current practice.

It is significant to note that once past the first gate, little difficulty is encountered in achieving the minimum requirement (9 years flying time) of the eighteen year gate. The normal second squadron tour should insure

achievement of the minimum requirements and no further assignments to operational flying billets would be required. Additional tours with regard to ACIA, including squadron command, serve only to increase the duration of continuous pay from twenty-two to twenty-five years of service.

2. WSAM Experience

The accumulation of WSAM related experience as a requirement of a career development plan leading to selection as a Project Manager constitutes the most pervasive constraint on the career of the URL aviation officer. It brings into direct conflict the aviation warfare specialty and WSAM subspecialty development programs by requiring the unrestricted line aviation officer to devote a significant period of time in his career to assignments that may contribute only marginally to his operational aviation development. The importance of attaining such experience to the aspiring Project Manager can not be overlooked for, just as excellence in command at sea builds on previous experience at sea, an essential contributor to being a professional Project Manager must be previous experience and responsibility in project management or material acquisition [Ref. 29].

The geometric rate of growth of technology in recent years and the impact of that technology growth on the Navy has provided a clear and urgent need to develop, through subspecialization, groups of officers with a depth of knowledge and experience in particular fields. One of these fields has been Weapon System Acquisition Management as

indicated by then Deputy Secretary of Defense Packard in his memorandum to the Military Departments and top Office of the Secretary of Defense officials in May of 1970 [Ref. 30]:

> Management in the Services will be improved only to the extent that capable people with the right kind of experience and training are designated to manage these major programs -- in fact all programs.

It is important to emphasize that it is experience and training, not experience or training, that is required for effective project management. In addition, the experience required must be related to project management as Deputy Secretary of Defense Clements stated in remarks made at the Defense Systems Management School in October 1972 [Ref. 31]:

> The Command of a battalion, a ship or an airplane squadron does not necessarily insure success of a Program Manager. Program management experience itself is essential.

General operational leadership, management ability and experience, therefore, are not sufficient to provide effective management of complex defense acquisition programs and it would be inappropriate to select personnel for top assignments in material acquisition simply as a reward for top performance as an operational commander. Specific expertise that comes from "hands-on experience" is essential. Knowledge and wisdom in this field are accumulated only through close involvement with the acquisition process over a period of years. Admiral Rickover

expressed this same belief during testimony before a Congressional subcommittee [Ref. 32]:

> Where personnel health is concerned, we insist that those in charge be qualified through training and experience. Why do we not insist that where the health of our Nation is concerned, those in charge of complex technical projects be likewise qualified through training and experience? ... It takes years of training and experience to develop an officer who is capable of being in charge of a major program.

In addition to the historical perspective provided by the previous remarks, the importance of WSAM experience as a qualification for project management was also assessed by means of an interview questionnaire distributed by the author to twelve of the current URL aviation officer Project Managers. The Project Managers were asked to indicate on a scale from one (Not Important) to five (Critically Important), the degree of importance they would place on the various qualifications currently desired for project management [Ref. 21]. Prior experience as a member of a project office team and a Bachelor's degree in a technical area <u>plus</u> field experience received average scores of 4.30 and 4.22 respectively. No other qualification received higher than a 3.90 indicating the near critical importance of acquisition experience in the views of the respondents, many of whom had not had such experience prior to assuming their current position as Project Manager. The interviews conducted in conjunction with the questionnaire indicated that while the project managers felt accumulating experience was necessary to optimize performance it was very difficult to get such experience and remain operationally

competitive. This conflict is illustrated further upon examination of the Project Manager Profiles depicted in Chapter II. Of the eighteen Project Manager selectees for FY 1975 and 1976, only twelve had accumulated sufficient experience in a subspecialty to be recognized as a proven subspecialist and the average number of years of Naval Material Command experience was 3.9 years. For the twelve current Project Managers interviewed by the author the experience level was similar. The average amount of Naval Material Command or Systems Command Headquarters experience was less than 3 years and if test and evaluation and OPNAV assignments were added to the experience base, the average increased to only slightly over five years. All of those interviewed, however, had had at least one aviation command. Thus a dilemma appears to exist for the aviation officer. While it appears to be clearly recognized, at least by those closely associated with the acquisition process, that the single most important item in a career program for project management must be to insure that project managers have had significant previous experience at a subordinate level in the acquisition system, achievement of this experience appears to work directly contrary to the requirements for operational career progression.

The eight years of WSAM related experience currently desired by the Chief of Naval Material exacerbates the dilemma. In order to satisfy this requirement in a career development plan, the potential Project Manager must devote

his entire first two ashore tours (includes time spent on education) and all the time subsequent to squadron command in WSAM experience tours. To follow such a career plan requires that the aviation officer forsake some of the traditional "tickets" for promotion and command such as service college, bonus command, Carrier Department Head, and staff assignments in favor of furthering his subspecialty expertise. Such a commitment on the part of the aviation officer necessitates a concomitant obligation on the part of the selection process to restrict Project Manager selection to those who have dedicated their careers to project management. To do otherwise would tend to undermine the entire system. Greater flexibility in the career program can be achieved by reducing the number of years of experience to six since this would allow attainment of either a service college tour or bonus command albeit at the sacrifice of WSAM experience.

The tendency when discussing the objective of WSAM experience is to become enamored with the number of years of experience when, in fact the type and timing of that experience is far more relevant. Early experience should be attained in the field activities or functional divisions and progress through assignments of increased responsibility just as in operational development. Experience level plateaus should be achieved in a logical progression with WSAM performance being the key to advancement to the next level. Adherance to such a progression would allow project

office team performance to become the prime criteria for selection as Project Manager and would enable greater emphasis to be placed on overall acquisition performance vice operational performance in the final selection process.

The attainment of WSAM experience as a career objective, therefore, requires a development plan that entails a tradeoff by the individual and the Navy between broadening operational experience and necessary WSAM experience. A willingness on the part of aviation officers to make such a trade-off can only be expected if parity in promotional opportunity and career progression can be demonstrated.

3. Promotion and Command

In the consideration of or establishment of, any career path the question of progression to responsible high level positions of authority must be addressed. To the aviation officer viewing the WSAM subspecialty field, it must be apparent that his talent and abilities will not be restricted by either a lack of opportunity or a high uncertainty with regard to advancement to responsible positions. If these restrictions do exist, many talented young men will direct their energies and attention to more fruitful fields.

The net worth of any career alternative depends upon the outcome value - the desireability of an outcome or payoff to the person involved - and outcome expectancy - the likelihood in his view that undertaking the activity

will really produce the outcome. The value-expectancy proposition [Ref. 33] states:

> ... that an individual's motivation to participate depends upon the anticipated values of all outcomes (positive and negative) of the endeavor, each multiplied by the strength of the individual's expectancy that participation will lead to that outcome.

It then becomes apparent that an increase in the positive values of the outcomes, as the participant sees them, will increase his motivation to participate. Similarly, increasing the expectancy that participation will lead to desired outcomes will also increase an individuals wish to participate. This view underscores the need for a reciprocal relationship between officer commitment to a career development program or plan and the opportunities offered to him by the Navy in that program. This fact was emphasized by then Deputy Secretary of Defense Packard in his memorandum on "Policy Guidance on Major Weapon Acquisition" [Ref. 30]:

> If capable people are to be willing to undertake these important program management assignments, ways must be found to give them some incentive to do so. Program managers must be given more recognition toward career advancement in all of the Services, and good managers must be rewarded just as good operational people are rewarded.

The Navy's performance record in response to this need has been slow in evolving and little supportive evidence exists to indicate the viability of a career path in project management. The problem seems to stem from an apparent unofficial classification of material support duty as being part of the "second-team." Such a view was supported by RADM Joseph E. Rice of the Naval Electronics

System Command in an interview reported by Loftus and Allen in 1973 [Ref. 20].

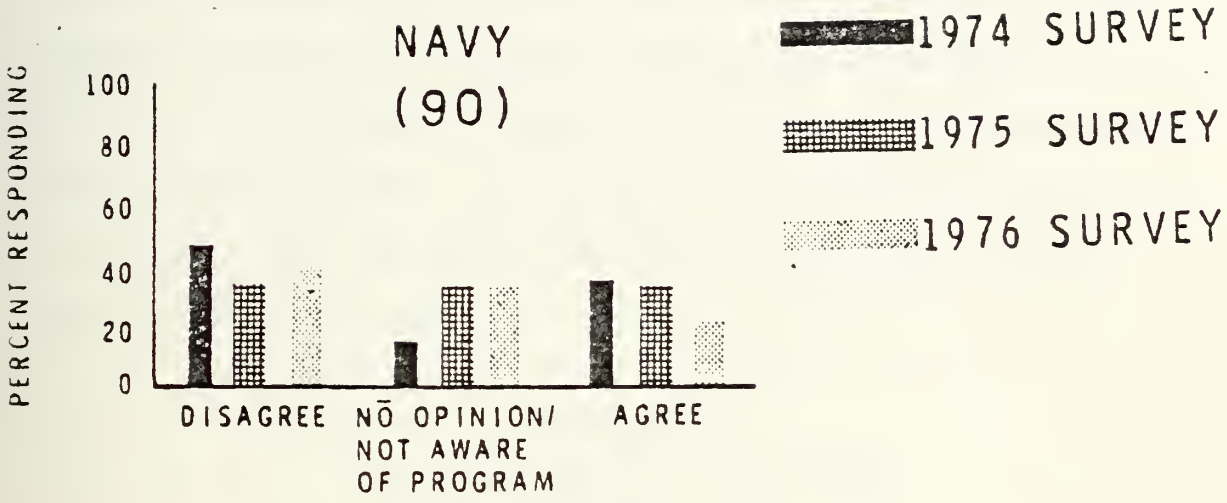
> A recent and yet unpublished survey provides some interesting conclusions concerning a distinct division between "operators" and "material" people. Any unrestricted line officer who has served two or more tours, totaling 5 years or more, in the Systems Commands or Naval Material Command Headquarters will henceforth follow a definite but unwritten career pattern and have somewhat limited promotional potential. If he does make Admiral he will not go to the fleet operational commands enjoyed by his contemporaries. This fact presents practical limitations for the unrestricted line officer considering a subspecialty in systems acquisition who aspires to be a project manager.

In addition, it appears there is some doubt among those associated with the acquisition process that the Navy has developed an effective career program in the field of acquisition management. This is evidenced in the responses to the statement "My Service has an Effective Career Program in the field of Acquisition Management" contained in a survey conducted by the Defense Systems Management College (DSMC), Fort Belvoir, Virginia [Ref. 34]. The survey is given to members of the Program Management Course held twice yearly at the school. The results obtained from the Navy attendees are depicted in Table XII.

No number of platitudes about the importance of the program, the elitism of the selected officers or the need for experienced people will convince prospective Project Managers that such an effective program exists. One of the keys to such an argument must be the history of promotion board results. Since failure to be selected by any of these boards along a career progression path will probably result in failure to achieve the Project Manager

TABLE XII

DSMC SURVEY RESULTS



goal, the explicit qualification criteria and selection histories of these boards will be closely watched by the ambitious prospective Project Manager. The data to date can be viewed from two perspectives: the WSAM designated aviation officer; and the aviation officer serving in the Material Command and Systems Commands Headquarters.

For the WSAM designated officers identified by the 1975 selection board, the data are available for only two years. The in-zone promotion history [Ref. 24] is depicted in Table XIII.

Table XIII

13XX In-Zone Promotion Data
1976 and 1977

	LCDR			CDR			CAPT		
	Elig	Sel	%	Elig	Sel	%	Elig	Sel	%
Overall	1244	777	62.5	718	472	65.7	689	327	47.5
WSAM	15	15	100	38	35	92.1	8*	3*	37.5*

*Data available for 1977 only.

These data indicate that the screening process conducted in 1975 correctly identified top performing officers in the grades of Lieutenant and Lieutenant Commander for WSAM designation. The program has not been established long enough to indicate the extent of the involvement of those officers in the acquisition field or the effect, if any, that such involvement may have had on their career progression. It would appear that those designated as WSAMs at the Commander level where the criteria for selection

are more demanding, have not enjoyed significant success. Care must be taken, however, with regard to making any conclusions based on one years worth of data. It is specifically because of the lack of extensive data that the promotion record of those aviation officers serving in the Material Command and Systems Command Headquarters, which contain most of the acquisition related assignments, was investigated.

Similar data obtained on the promotion record of 13XX officers serving in the Material Command or System Command Headquarters present a somewhat different picture. These data are presented in Table XIV.

Table XIV

13XX In-Zone Promotion Percentage
Naval Material Command

	1974	1975	1976	1977
LCDR	--	--	--	66.7%
CDR	--	50.0%	50.0%	80.0%
CAPT	50.0%	30.8%	64.6%	40.0%

Though no uniform trend or pattern is indicated by the data, it does depict a less favorable performance record. Over the past four years, with the exceptions of 1977 for Commanders and 1976 for Captains, URL aviation officers assigned to the Material Command and Systems Command Headquarters have been promoted at a rate less than or equal to the overall URL aviation community average. In addition, the high variability of the promotion rate, especially at

the Captain level, adds an unfavorable risk factor to job assignment within these Headquarters for it gives the appearance that, despite statements to the contrary, no clear commitmant on the part of the Navy has been made to those officers associated with systems acquisition.

Whether the less than favorable promotion record of those serving in WSAM experience billets is the result of the quality of the people or the "second team" aspect of the billets is considered irrelevant, for either case indicates the difference between the stated importance of the acquisition field and the view of that importance by either the assignment or selection process. It is to this assignment and selection process that efforts to improve the situation created by the current promotion performance record must be addressed. Support must be solicited from those responsible for providing guidance to the assignment and selection process in order to stabilize the current promotion variability and to reduce the uncertainty that may be associated with the WSAM career program. This should have the effect of underscoring the Navy's commitment to the material support field and thereby increase the net worth of this career alternative.

As indicated earlier, the explicit qualification criteria and selection histories of selection boards are closely watched for, in effect, these board actions prescribe the criteria for career progression. This kind of criteria

setting is not only justified but highly desireable for professional development if the criteria prescribed by these boards are appropriate to the Project Manager career. One criterion apparently indicated by the promotion data for Captain Selection (Table XV) is prior command.

Table XV

13XX Captain Promotion Opportunity

	1976			1977		
	Elig	Sel	%	Elig	Sel	%
Overall	393	182	46.3	296	145	49.0
Prior Command	236	165	69.0	198	138	69.7

Though attainment of command does not guarantee selection, non attainment practically guarantees non selection. Though admittedly this is only one criterion, it is apparently a significant one nonetheless. The implication of this criterion pervades the development program and gives clear indication to the aspiring aviation Project Manager that the path to selection for Project Manager must include successful screening for command at the Commander level. To do otherwise would seriously impair promotion opportunity to Captain without which selection as Project Manager becomes very remote. It logically follows that since command selection is based heavily on performance as a department head, Ref. 22, early professional development should center on accumulating experience so as to maximize

performance as a department head. Such logic only aggravates the dilemma of the perspective aviation Project Manager faced with the necessity of accumulating WSAM experience prior to selection for command. Solution to the dilemma would appear to lie in relaxing the requirement of aviation command as a criterion for selection as a Project Manager.

It is Will Rogers that is credited with saying "It ain't the things, we don't know that get us into trouble, its the things we do know that ain't so." It is postulated that the criteria of aviation command may be one of those things "that ain't so." As Senator Lawton Chiles remarked in an address at the Naval Postgraduate School in April 1974 [Ref. 35]:

> ... one of the things we thought we knew but wasn't so was that all military officers were "interchangeable executives"; that all Navy Officers, for example, were "natural managers" and that any healthy available officer would qualify as a Program Manager.

Yet under the current system, the aviation Project Manager usually comes to his project management job through a career progression that has continually put opportunity to gain on the job acquisition experience and training in direct competition with the time he should devote to preparation for command. Instead of coming to his job with procurement experience, management education and weapons acquisition expertise, he arrives more as the operational commander and less the proficient Project Manager. Further, while there are several strands of executive commonality between the two undertakings, there are important differences.

Project management does not occur in the absolute personal presence environment that pertains to squadron command at sea. As Admiral Isaac C. Kidd, Jr. indicated in U.S. Naval Institute Proceedings in August 1975 [Ref. 36]:

> It is imperative to understand the difference between command and management. Naval officers realize that with command you issue orders; but you can't "command" an A-7 aircraft to grow from a 1960 "gleam in the eye" of some unknown design engineer into a successful combat deployment within 7 or 8 years! Much of the uncertainty involved in these undertakings is subject only to the laws of nature and not the commands of men. Only effective management can make that occur.

In addition, project management must be accomplished in an adaptive fishbowl world lacking absolutes and consisting of a myriad of individuals with interests and motivations foreign to previous command experience [Ref. 29].

Given these important differences why must aviation command pervade the career development path for Project Manager? One reason offered is that command is considered more of an acid test of an aviation officer's competence than a specific learning of knowledge that will contribute to successful project management. This viewpoint was verified in the interviews conducted by the author with the current aviation officer project managers and by the responses to the interview questionnaire. When asked to evaluate the importance of squadron command as a qualification for project management, those interviewed indicated it to be less important than:

Prior WSAM Team Experience

Bachelor Degree (Technical) + field experience

Master's Degree (Technical)

Advanced Functional Training

Yet during the individual interviews emphasis was continually placed on the importance of this squadron command qualification adding further credibility to the dilemma of WSAM experience versus operational command. The reasons given for the necessity of this requirement were:

(a) promotion

(b) operational experience

(c) assessment of ability to lead and manage

(d) responsibility

(e) maturing process

(f) accountability

(g) refinement of decision making ability

The first of these reasons represents an acknowledgement of the operational orientation of the current system. The second reflects the need for the project officer to be familiar with the weapon system's operational scenario. The interviews indicated that it was this type of experience rather than command per se that was important. The remaining reasons appear to reflect characteristics of the job that may, in fact, not be unique to the aviation command billet. It can be argued, therefore, that if the necessity of aviation command in the career development plan is to assess an officer's ability to lead and manage by providing an

environment of high responsibility and accountability as well as to further his professional development then this same assessment can be made in other than a Commanding Officer billet. Certain billets in the program management field such as Deputy Project Manager or program manager of certain minor programs involve the same common demonina-tors of accountability and responsibility, though admittedly not with absolute equivalency to command at sea or in the air. As such they provide an opportunity to assess not only ability to lead and manage but also performance in the relevant arena of project management. To provide parity for these billets with the operational command at the Commander level would significantly reduce the dilemma of competition between operational and WSAM development, and provide greater flexibility in the career development program.

An alternative to establishing command parity between project management and command at sea would be to provide greater recognition at the Captain promotion level for those who have exhibited superior performance in the WSAM field thereby decreasing the relevance of aviation command to selection at that level.

The inconsistent promotion record of those aviation officers assigned to Material Command or Systems Command Headquarters billets provides a significant constraint on the viability of the career development path for project manager. When this is added to the pervasiveness of aviation

command on future promotability the message is clear: Advancement to Captain and subsequent selection as Project Manager lies in the operational arena and development must center on preparation for command! This fact dimishes significantly the attractiveness of the Project Manager career pattern and greatly reduces the probability of attaining fully qualified aviation Project Managers by anything other than a random process.

The problem is amenable to solution through straight forward actions. These actions require a new perception of what is wanted and how to achieve it. Direction must come from the Chief of Naval Operations through the Bureau of Naval Personnel and the selection process. Top quality people must be assigned to Material Command billets and at least promotion parity established with other competing commands. The notion of the "generalist" as the man for all seasons can no longer be considered valid. Viable career progression paths should be established for the URL aviator that recognizes a parity between project management billets and command or else provides greater recognition to the non command selected aviator for his performance in the project management field. Promotion based on management performance as well as operational performance must pervade the entire development path not just at the Project Manager level.

4. Education

The current educational objectives of a WSAM career development plan have evolved from the original suggestions of the 1969 WSAM Study and its associated survey of program management personnel. Among the conclusions reached by the Study [Ref. 37] were:

> Graduate education significantly enhances the competence of those in the project management field, including those at associated field activities.
>
> A specific educational program in support of project management should consist of formal education in engineering, science or mathematics followed by graduate education in the field of management, business administration or industrial engineering.

The necessity of education to the improvement of efficiency in program management was re-emphasized by the 1975 Navy-Marine Corps Acquisition Review Committee Report [Ref. 19]. This report listed among its desireable criteria for program management:

> An undergraduate degree in a technical field.
>
> An advanced technical degree.
>
> Business Management training reflected in the M.B.A. degree or comparable training in systems management.
>
> Attendance at the 20 week course in program management of the Defense System Management School.

Currently for WSAM selection, technical or business qualification, are considered of equal importance, though the educational background of those currently serving as Project Managers remains primarily technical. The constraints that attainment of an advanced degree impose on the career

development plan of the aviation officer are more subtle than those previously discussed.

Inherent in the attainment of the desired education is the previously discussed dilemma of the tradeoff between operational development and WSAM development. Education, in fact, can be viewed as the initiator of the dilemma, for it is through education primarily that the aviation officer enters into the subspecialty management portion of OTMS and WSAM. Thus the achievement of the advanced degree sets the stage for the conflicts previously described. Realization of this fact may be reflected in a reluctance on the part of unrestricted line aviation officers to devote the necessary time (1.5 years - 3 years) to achievement of an advanced degree. The implications of repeated touring in the subspecialty attained through education that is inherent in the OTMS concept adds to this reluctance. This alone may inhibit a number of outstanding officers from initial entry into the program.

For those who do desire the education and associative subspecialty development, the timing of that education in the career development path can also present problems. Indications are that current policy is placing greater emphasis on the achievement of postgraduate education during the first shore tour. Problems associated with the utilization of these educated officers, however, are beginning to develop. In general, the coding of billets down to the Lieutenant level has lagged the education policy. The

result is that the young officer completing his education is faced with limited opportunities to operate directly in his subspecialty and if detailed ashore may find little correlation between his education and the billet to which he is assigned. This problem is recognized, however, and efforts are underway by the subspecialty sponsors to broaden their billet bases.

For the URL aviation officer, especially those in technical degrees requiring greater than two years to complete, a conflict arises between utilization and ACIA. Utilization in his subspecialty followed by a disassociated sea tour will practically guarantee failure of the first flying gate. Thus, in general, these aviators are ordered to a sea tour immediately upon completion of their degree requirements. Utilization on subsequent shore touring may depend on their accumulated flight time to date and the availability of flying billets within their subspecialty structure.

Greater flexibility in utilization would appear to be achieved by the integration of postgraduate education into the development plan during the second shore tour. At this point the requirements of the first gate of ACIA are satisfied and little problem should be encountered in achieving the second gate. Utilization in subspecialty at this point would then be a function of the timing of command screen review and would be geared to insuring that the aviation officer return to his second squadron tour in time

for his performance record in that tour to be reviewed by the screening board. The disadvantage to this approach is the possible loss of WSAM experience time during the first shore tour.

The implication of the relationship between education, utilization, WSAM experience and ACIA is the general necessity for the aspiring aviation Project Manager to combine WSAM experience flying billets and education during his first two shore tours in order to satisfy the objectives of the career development plan.

D. CONCLUSIONS

The major implication of this analysis is that a career in the field of project management (with the education and experience described) may not be compatible with a career in the operational field. Though time will permit the accomplishment of all the objectives of the optimum career development plan, there is doubt the promotion and screening system will adequately reward an aviation officer who attempts to pursue actively such a plan. Specifically the problem occurs in the early development tours prior to aviation command screen. It is during this time period that, for the URL aviation officer, the operational aspect of OTMS appears to drive the system. Assignments, placement, and development of those officers with indicated future potential is geared to insuring that the officer remains competitive for command screen. As long as such command screening remains dedicated to selecting "demonstrated

quality operators" (emphasis added) from among the "most successful department heads", Ref. 22, the dilemma of subspecialty development will remain. A reluctance on the part of the aviation officer to accept assignments outside of his warfare specialty for significant periods of time during this early development stage and a reluctance on the part of assignment personnel to utilize top performing officers in such a manner, when viewed from this operational orientation would appear to be a logical response to such a system. This cycle of non assignment therefore becomes self sustaining until command eligibility is determined. Once this milestone is past, variability of career paths leading to further promotion becomes feasible, and promotion opportunity may even be enhanced by subspecialty development leading to designation as a "proven subspecialist" as depicted in Table XVI.

Table SVI

13XX Captain Promotion
1976 - 1977

	Overall			Proven Subspecialist		
	Elig	Sel	%	Elig	Sel	%
1976	393	182	46.3	52	40	76.9
1977	296	165	49.0	51	28	54.9

Solution to the dilemma posed by the operational development-command cycle could be simple and quickly accomplished by simply reducing the criteria for project management and accepting the present system. Promotion and development would continue to be driven by an operational orientation leading to succeeding commands-at-sea and lip-service paid to the importance of project management by diverting certain selected top performing officers, albeit without the requisite qualifications and experience, into project management billets. The alternative solution is more difficult. It involves the recognition of variable career paths leading to career progression throughout the entire career development period. Career paths in which the URL aviation officer may pursue subspecialty and specifically WSAM development without jeopardy to his promotability and without the necessity of transfering to the restricted line. It involves a recognition of the importance of certain skills, qualifications, and previous experience tours in the development of project managers just as a certain set of skills, qualifications and previous experience tours are considered important in operational command development. It requires structuring a program with a specific set of requirements, monitoring development and evaluating performance within the program. It entails providing incentives, not subsidies, to those that commit themselves to the program so that outstanding officers can be assured that a viable pathway to success, as measured by promotion, exists within

the program. Selection boards must be appraised of the intent of the Navy in these areas and the officers affected must similarly be made aware of the importance attached to this program by the Navy: both through assignment of these officers and their selection for command and promotion.

It is felt that the latter solution provides the better structure within which recognition of the importance of project management may be accomplished and a viable career program in that field established. The next chapter will present recommendations for the structuring of such a career program.

V. RECOMMENDED CAREER DEVELOPMENT PROGRAM FOR THE WSAM DESIGNATED AVIATION OFFICER

A. INTRODUCTION

The goal of integrating the criteria of the WSAM program with the milestones of the career development plan for the unrestricted line aviation officer can be acomplished in the URL aviation community only through a career development program that attempts to maximize the development of both operational and WSAM expertise. The proper balance of these two career areas requires top level policy guidance and a keen sense of judgement on the part of those responsible for career management. It observes the need for a strong centrally managed career development, training and assignment program to support the project management objectives of the Navy. Without the employment of sound management principles the best organization and intentions cannot insure attainment of the Navy's goals. It is with full recognition of the constructive work presently being done to improve the systems acquisition process that recommendations are made in order to further benefit these program development and career management efforts.

B. CAREER DEVELOPMENT PROGRAM

1. Policy Direction

The success of any career development program is heavily linked to support from the top and proper structural relationship of the development program to the organization.

All the development initiatives in the world will be of little avail unless top management is ready to accept the changes inherent in such a development program. The need for properly qualified project managers has long been recognized. What may not be appreciated is the necessity for firm direction and hard choices in order to establish the development program necessary to supply the qualified personnel. The need for a "broadly based group of individuals who can provide from within their ranks brilliant operational command at sea, broad management leadership ashore and technical capabilities ashore and afloat" [Ref. 38] has long been recognized by the Department of the Navy in its Flag selection process. The recent letter of outgoing Secretary of the Navy J. William Middendorf II [Ref. 39] indicates the current importance of recognizing the contribution made by those involved in project management.

> The subspecialist programs which result in changes to traditional career patterns are vital to the future success of the Navy. It remains for you to lend credibility to our assurances that subspecialties can indeed continue to provide a path to flag rank.

It is suggested, however, that a viable career program cannot be built solely on selection to Admiral. The probability of promotion is simply too small when viewed from the prospective of the junior officer considering a subspecialty program. Credibility must be established throughout the entire career development process. Both statutory promotion boards and administrative selection boards at the levels of Lieutenant Commander through the

Aviation Captain Command Selection Board must be appraised by authorities above the level of the Chief of Naval Material and the Chief of Naval Personnel of the importance the Navy places on the development of the technical and managerial talent necessary to manage the acquisition process for the Service. A parity must exist between managerial development and operational development beyond some established point in a career path. A general lessening in the importance of command at the Commander level on future promotability is indicated by this research. The current policy of rewarding only the "quality operators" at a point some five or six years prior to their next statutory selection point suggests an undermining of the viability of a project management development program prior to that point. It is for this reason that some degree of control of the selection process is important to the establishment of a coherent career development program. Recognizing that part of the objectives of command are to provide selected officers with responsible positions in which to demonstrate their leadership and managerial decision making skills as well as provide a position of accountability for their actions it is suggested that such a "test" of an officer s ability can be made in other than an aviation command billet. This fact is recognized at the Captain level and it is felt that a good argument exists for parity at the Commander level. Whether this recommendation is accepted or not it is felt that selection to Captain must provide greater

recognition for those aviators who have exhibited outstanding performance as subspecialists regardless of their command selection. The decision point between aviation command and project management at the Commander level indicated in the current BUPERS INST 1040.2A "Officer Weapon System Acquisition Management Program" [Ref. 40] should provide viable promotion along either path as an unrestricted line officer rather than a decision between unrestricted or restricted line as is currently the case. In order to lend credibility to the dual path concept, consideration should be given to the establishment of a separate board for the selection of Major Project Managers as was suggested by the Chief of Naval Operations in August 1970 [Ref. 8]. Such a board would consider the same group of officers as the Aviation Captain Command Screen Board but would be composed of members from BUPERS, OPNAV and NAVMAT that were more closely aligned with the acquisition process. Selection to more than one command list would be possible as is the case today but selection to the respective lists would be made by boards more closely aligned to the expertise desired.

Whatever the form, it is felt that a stated policy guidance with regard to project management is required at this time in order to underwrite the viability of other career program initiatives. The Navy must insure that those officers selected and trained as subspecialists are not penalized by sources external to the subspecialty arena. It

is within the framework of this policy guidance that the rest of the development program must be structured.

2. Organizational Framework

In order for a development program to function effectively it must have a well defined framework in which to operate. Future requirements for Project Managers for both major and less than major programs should be assessed and supportive billet structures developed for each of the communities represented within the WSAM subspecialty community. This billet structure should reflect not only the needed number but also distinct levels of increased responsibility that would enable evaluation of career progression. Of specific necessity for the development of the URL aviation officer, is the requirement for an adequate number of operational flying billets at the Lieutenant and Lieutenant Commander level in order to alleviate the conflict arising between ACIA and subspecialty utilization. This requirements assessment could then be used to determine the specific inventory required by grade level and community.

In establishing such an inventory requirement, attention should be given to the desired community size At present only a limited number of projects are designated as command equivalent. Consideration should be given to the suggestion of the NMARC Study [Ref. 19] to increase the number of projects designated as Major Command Equivalent. This would have the dual effect of increasing command opportunity at the Captain level for the overall aviation community which currently is about one-half that of the other warfare

communities (Table XVII) and would enhance the viability of the career program thereby making it more competitive in attracting the top performing aviation officer.

Table XVII

Captain Command Opportunity

Community	Sea	Total
Surface	37%	45%
Submarine	28%	41%
Aviation	15%	27%

If command opportunity remains small, careful consideration should be given to restricting community size in order to provide adequate incentives concerning progression in the career field to program members. It should be the goal of the organizational framework to develop Project Managers not to fill billets hence the emphasis on community size flows from this concept.

Finally, the organizational framework should include provisions for the periodic reassessment of future plans and requirements as well as a feedback system to determine if the framework is supporting the program goals. Flexibility must be built in so that the system can respond efficiently to changing requirements.

3. Career Program Management

One of the keys to effective management of the career program for the URL WSAM aviation officer is a continuing dialogue between the user and supplier as to the

program requirements. Not only must the numbers and types of officers required be known but also agreement must be reached upon a standard set of criteria against which to measure candidates. Policy guidance provided by senior organizations must be translated into realistictic criteria and goals for the program. The amount of experience to be accumulated in the development program should be carefully assessed. Under current constraints, two experience tours, one in a flying billet during early development and the other as a member of the project office team appear to be the maximum possible prior to selection as Project Manager due to the conflicts imposed by the ACIA and command screen. Once agreement has been reached on selection criteria then candidates should be selected in accordance with the agreed criteria. Motivation toward the program and demonstrated education and/or acquisition related performance should also be assessed in the selection process. Future promotability in light of the policy guidance provided should also be assessed. In order to optimize development, an attempt should be made to select and identify the desired officers early in their careers. It is recommended that selection eligibility commence after completion of one operational squadron tour and one shore tour so that a meaningful evaluation of future potential can be made. It is recognized that such a policy may restrict the size of the pool of eligible officers at this stage in their development but with the current emphasis on early post-graduate education and with a sufficient number of officers

detailed to test and evaluation or Naval plant representative billets on their first shore tour a more than adequate pool exists. In addition under such a policy, demonstrated performance can be assessed. Lateral entry at later stages in a career can be tolerated but selection should be made based on the desired criteria and exceptional acquisition related performance and not on the general "attractiveness" of the officer. Opportunity should also be provided to the selectees to refuse designation as motivation must remain a dominant criteria.

To those selected who accept WSAM designation an obligation must be incurred by the management system to provide close monitoring of career development. This entails the assignment of a subspecialty oriented manager, preferably from the same warfare community but minimally from the WSAM subspecialty community, to perform this vital role. Performance records on WSAM subspecialists should be kept by this officer and shore assignments coordinated in terms of career advancement and subspecialty development. If community size is restricted then it is felt that effective coordination can be maintained down through the billet structure and efficient utilization will attain. Such a management system should also insure that top performing officers are given demanding jobs of increasing responsibility thus maximizing their development.

Finally, the management system should provde for a re-screening process based on demonstrated WSAM subspecialty

performance. Such a policy would provide a refinement process in addition to the normal promotion process that would attempt to identify those officers for future development. In addition it is felt that such a policy would provide greater credibility for the career program and indicate to selection boards the future importance of these officers to the Navy. An adjunct to this performance evaluation process is the requirement to stress managerial performance in all performance evaluations so that a true assessment of operational and managerial capability can be made.

4. Communication

Communication in a career development program means keeping the members of the community informed and thereby involving them in the development of their own career plans. Representative career profiles that realistically portray current policy should be publicized as well as information on billets currently coded for WSAM development. Information should be circulated among subspecialty officers as to current plans and programs. This would not only keep them informed as to their own career development but also enable them to provide guidance to other officers considering subspecialty development. It must be emphasized, however, that no amount of advertisement will do anything to stimulate interest in the career development program if the expected career opportunities are not provided. Selection and promotion must follow performance in the subspecialty field

otherwise the frustration experienced by the members will discourage promising young officers from pursuing the career field.

C. SUMMARY

The top performing unrestricted line aviation officer must be encouraged to provide his operational experience to the acquisition process. He will be inclined to do so, however, only if he can be shown that a viable career development program with favorable promotional opportunities exists. This research has identified some of the major constraints and conflicts imposed by the integration of the criteria for Weapon Systems Acquisition Management development leading to selection as a Project Manager with the milestones of the career program for the unrestricted line aviation officer. The criteria of the development program for project management can be integrated with the development program of the aviation officer, however, certain changes in the assignment, selection and promotion process are required in order to improve the feasibility of such a program. An assessment of these changes has been made and recommendations regarding the essential elements of the management of that career program have been proffered for consideration. It is felt that a program incorporating these recommendations would aid in the development of true professionalism in the area of weapon systems development and acquisition.

Appendix A

WSAM CAREER STUDY PROJECT

Description of the Study

This study is conducted as part of a thesis research project into the Weapon Systems Acquisition Management sub-specialty career development program. The purpose of the thesis is to examine the requirements and constraints imposed on the career program of the 1310 officer by his actively pursuing a career leading toward Major Program management. An attempt will be made to synthesize the data collected into recommendations regarding viable career patterns for the aviation officer.

This phase of the study deals with the contribution of previous tours to the acquisition of leadership and management skills required for program management. In addition, the study attempts to measure the importance of certain designated qualifications as prerequisites for project management.

Your thoughtful cooperation in providing this information would be most appreciated. If you have any questions, please feel free to contact me.

Please return this to me by January 30th.

LCDR. TERENCE J. COONEY
c/o Professor Carson K. Eoyang, Code 54Eg
Department of Administrative Sciences
Naval Postgraduate School
Monterey, CA 93940
Phone: (408) 646-2756 AV 878-2756

Instructions

Please fill in the BACKGROUND INFORMATION requested. All responses are anonymous, so please fill in all the information as accurately as possible.

Next, look over the list of management skills provided with this answer sheet. Consider the requirements and responsibilities of the program manager billet and indicate the degree of proficiency in each skill that the billet requires. In Part II, as honestly as you can, estimate the degree of proficiency you had in that skill prior to assuming your duties as program manager. Finally, a list of desired qualifications for program managers is presented in Part III. You are asked to rate the degree of importance of each of these qualifications, enabling you to effectively perform your duties as a program manager. In each Part space is provided for you to indicate additional skills or qualifications that you deem important to the effectiveness of a program manager and you are encouraged to make additions since the designated lists are not exhaustive.

Please use the response scales at the top of the list in chosing your answers. In the spaces corresponding to the designated skill/qualification, write the number which best corresponds to your experience. Please complete all three Parts.

Please complete this questionaire and return it to me by 30 January. A preaddressed envelope is provided for your convenience.

Background Information

1. Current rank_____

2. Billet:_____Project Manager_____Deputy Project Manager

3. Total years of military service_____

4. Total years of operational flying_____

5. Total years in weapon system acquisition related billets_____

6. Total time as project manager_____yrs._____mos._____

7. Education:

   Undergraduate Major_____

   Graduate Major _____

   Other _____

8. Command Tours

   Squadron CO_____

   Air Wing Commander_____

   Other (type)_____

1. Getting information: To get timely, accurate information on the status of individuals, equipment and organizational unit functioning.

2. Listening: To help others communicate by making others feel at ease and by appearing receptive, open to information, interested in others and capable of being trusted.

3. Understanding others: To know your people, e.g., to understand their needs and motives. To read feelings accurately, to understand their real agendas.

4. Identifying problems: To know how to filter and interpret the masses of available data in order to identify significant problems accurately.

5. Critical thinking (Systems analysis): To think critically about complex problems--to "decompose" such problems into their constituent components, organize these components systematically, and make decisions on the basis of this kind of analysis.

6. Planning: To plan clearly and comprehensively, i.e., determine action priorities, identify relevant alternatives, assess potential consequences, anticipate obstacles and lay out specific action steps to appropriate time sequence to solve problems or achieve objectives.

7. Assessing people: To assess his/her own and others' (subordinates, peers, superiors) capabilities (strengths and weaknesses) accurately and match people and jobs to maximize individual performance and satisfaction.

8. Identifying resources: To identify and marshal resources--materials, people, funds, political support--to achieve objectives.

9. Taking initiative: To act proactively rather than being passive or reactive; to persist and to be resourceful (e.g., taking two or more actions to circumvent an obstacle when blocked, rather than giving up).

10. Setting goals to improve performance: To be concerned with "doing better" against standards of excellence; to set specific goals and take personal responsibility for improving their own and others' performance.

11. Delegating responsibility: To get others to take responsibility by giving them responsibility and by sharing authority.

12. Using the chain of command: To use the chain of command to organize tasks clearly in order to get things done, maintain command integrity and formal control.

13. Developing subordinates: To help, teach or "coach" others to be able to do their jobs better and groom them for future jobs.

14. Exercising self-control: To remain calm under pressure reflect on emotions or impulses, e.g., anger ("exploding" at people and excessive concern "getting too close to the men"), rather than acting them out immediately and so avoid making hasty decisions.

15. Supporting military values: To express support for and model Navy values and conduct ("professionalism" in behavior, protocol, appearance, etc.) in an exemplary manner.

16. Using technical knowledge: To utilize technical training and available technology to achieve positive outcomes; to be concerned with technical improvement; and to take pride in technical accomplishments.

17. Being flexible: To know when to be flexible--to adapt attitudes and behavior to new situations; to see the merits of both sides of an issue; to change one's mind in the face of new information.

18. Exercising management control: To monitor others' activities and results to be sure tasks are completed and to evaluate performance against measurable standards.

19. Using formal authority: To know how to control others "formally" by issuing direct orders, by using rank to get others to act, by commanding subordinates, by requiring subordinates to conform to established structure or procedures, and by disciplining unresponsive subordinates.

20. Interpersonal influence: To influence or persuade others informally (e.g., political skill, charisma, etc.); to build political coalitions; to use informal power networks to mobilize support: to motivate others with personally meaningful reqards, symbols or responsibilities.

21. Resolving conflict: To resolve conflict and confrontation situations in ways that lead to effective solutions (e.g., productive negotiation, mutually satisfactory "win-win" compromises, etc.) rather than stalemates or continued confrontation.

22. Counselling: To counsel and advise subordinates on such issues as work performance, disciplinary actions, drug and alcohol use, and personal problems.

23. Giving feedback and recognition: To give specific feedback and recognition to subordinates on the basis of their task performance.

24. Having positive expectations/respect for others: To have positive expectations of subordinates' ability to perform and a belief in peoples' basic worth, as opposed to negative expectation, mistrust or a tendency to sterotype subordinates.

25. Team building and collaboration: To establish and maintain well functioning work teams by promoting mutual trust and cooperation among team embmers, by getting commitment to common goals, by rewarding team efforts, and by creating congenial work atmosphere.

I. Considering the responsibilities and requirements of the program manager billet, what degree of proficiency in each of the following skills do you think is required to be most effective? (Use the following reference scale for all your responses.)

1	2	3	4	5	6	7	8	9
no proficiency		little proficiency		some proficiency		considerable proficiency		complete proficiency

SKILL	REQUIRED PROFICIENCY
1. Getting information	7.64
2. Listening	7.55
3. Understanding others	7.73
4. Identifying problems	8.55
5. Critical thinking	7.91
6. Planning	7.82
7. Assessing people	7.36
8. Identifying resources	7.64
9. Taking initiative	8.45
10. Setting goals	8.18
11. Delegating responsibility	7.73
12. Using the chain of command	6.73
13. Developing subordinates	6.91
14. Exercising self-control	7.45
15. Supporting military values	6.64
16. Using technical knowledge	7.18
17. Being flexible	7.82
18. Exercising Management Control	8.09
19. Using Formal Authority	6.09
20. Interpersonal Influence	7.73
21. Resolving conflict	8.00
22. Counselling	6.36
23. Giving Feedback and recognition	7.64
24. Having respect for others	8.18
25. Team building	8.45

ADDITIONAL SKILLS (PLEASE SPECIFY)	PROFICIENCY
26. _____	_____
27. _____	_____
28. _____	_____
29. _____	_____

II. Considering all your experience and training to date, what degree of proficiency do you think you had in the afore mentioned skills prior to assuming your current billet? (Use the following reference scale for all responses.)

1	2	3	4	5	6	7	8	9
no proficiency		little proficiency		some proficiency		considerable proficiency		complete proficiency

SKILL	ACQUIRED PROFICIENCY	SKILL	ACQUIRED PROFICIENCY
1. Getting information	6.91	16. Using technical knowledge	6.64
2. Listening	6.82	17. Being flexible	7.00
3. Understanding others	7.27	18. Exercising Management Control	6.82
4. Identifying problems	6.82	19. Using Formal authority	7.36
5. Critical thinking	7.18	20. Interpersonal influence	7.00
6. Planning	6.45	21. Resolving conflict	7.09
7. Assessing people	7.73	22. Counselling	7.18
8. Identifying resources	6.64	23. Giving Feedback and recognition	7.55
9. Taking initiative	8.00	24. Having respect for others	8.00
10. Setting goals	7.36	25. Team building	7.18
11. Delegating responsibility	6.91		
12. Using the chain of command	7.36		
13. Developing subordinates	7.00		
14. Exercising self-control	6.00		
15. Supporting military values	7.36		

ADDITIONAL SKILLS (PLEASE SPECIFY)	PROFICIENCY
26. _____	_____
27. _____	_____
28, _____	_____
29. _____	_____

III. Considering the requirements and responsibilities of the program manager billet, what degree of importance would you place on the following qualifications for project managers? Rank each item as a separate entity not in relation to the other items. (Use the following reference scale for all your responses.)

1	2	3	4	5
irrelevant	nice to have	marginally important	very important	critically important

1. Master's level education in Technical (i.e. Engineering, Physical Science, Math, etc.) Area _____ 3.90
2. Test Pilot School _____ 2.50
3. Bachelor's Degree in Technical area plus field experience _____ 4.11
4. Master's level education in Business Management (i.e. Systems Acquisition, Finance, Business Administration, etc.) _____ 3.40
5. Advanced Functional Training followed by duty in the Naval Material Command, Defense Systems Management College (Fort Belvoir), or Industrial College of the Armed Forces. _____ 3.90
6. Bachelor's Degree in Business Management _____ 3.22
7. Squadron Command _____ 3.80
8. Prior experience as a member of Project Office Team (i.e. Deputy Program Manager, Deputy Program Manager for a Function, ASPO, NAVPRO, On-site Project Officer, Type Desk or Platform (Hardware) Sponsor's Organization) _____ 4.30
9. Prior experience in Weapon System Acquisition Management Support Functions (i.e. Engineering Supoort, T&E, NAVPRO, NARF.) _____ 3.70
10. Other (please specify) _____ _____

DEPARTMENT OF THE NAVY
BUREAU OF NAVAL PERSONNEL
WASHINGTON, D. C. 20370

IN REPLY REFER TO
Pers Ag-snw
28 APR 1970

From: Chief of Naval Personnel
To: Chief of Naval Operations
Via: Chief of Naval Material

Subj: Career Development and Selection of Weapon Systems Acquisition Managers

Ref: (a) CNP memo Pers Ag of 4 Mar 1970
(b) SECNAVINST 5000.21A
(c) Navy Programming Manual (OP 90P-1C)

Encl: (1) "Major Command" equivalency for Project Managers
(2) Selection, ordering and tour lengths of Project Managers
(3) Adequacy of functional WSAM training
(4) Postgraduate education for Project Managers
(5) Project Management subspecialty

1. In response to requests from the Chief of Naval Operations and Chief of Naval Material, a staff study of Career Development and Selection of Weapons Systems Acquisition Managers (Project Managers) has been conducted. Reference (a) was a progress report of the study effort and this is the final report.

2. A summary of recommendations follows:

a. Major Command Equivalency

Project Manager positions for all Captains for CNM/SYSCOM designated projects for which Charters are prepared as prescribed in reference (b) should be recognized as "equivalent to Major Command" for promotion purposes. Enclosure (1) sets forth recommended administrative procedures for accomplishing this by fitness report entry. Similar procedures are recommended for Program Coordinator positions (designated as prescribed in reference (c) for Captains in the Office of Chief of Naval Operations.

In addition, the Secretary of the Navy should continue to provide guidance to Flag Officer Selection Boards by stressing the need to select officers who are best fitted for future assignment even though their past assignments may have been outside the norm of traditional career patterns. Such guidance will do much to influence young officers to aspire to serve to this emerging area of endeavor.

Subj: Career Development and Selection of Weapons Systems Acquisition Managers

b. Selection, Orderwriting, and Tour Lengths of Project Managers

Project managers should be selected by board action. In addition, administrative procedures associated with orderwriting, such as enroute training and turnover time, should be formalized to ensure project manager continuity. Enclosure (2) sets forth recommended procedures for accomplishing this.

c. Adequacy of Functional Training

The project manager's course at the Defense Weapons Systems Management Center, Wright-Patterson Air Force Base, appears adequate and Navy quotas have been fully subscribed in the past. The provisions of enclosure (2) will ensure greater utilization by prospective project managers. Enclosure (3) contains a discussion of the course.

d. Postgraduate Education for Project Managers

Existing technical education programs are adequate for those projects which require emphasis on engineering principles. Where managerial skills are more dominant, the more appropriate education is a combination of technical background followed by graduate education in the field of management. The following specific actions are being taken in support of the above conclusion:

(1) The existing Management curriculum at the Naval Postgraduate School will be strengthened in the Material Support option to provide as much emphasis as possible in Weapons Systems Acquisition.

(2) The Naval Postgraduate School is developing a curriculum specifically tailored to weapon system acquisition management. Enclosure (4) contains a description of this new management curriculum which will be offered to officers with technical undergraduate education.

e. Project Management Subspecialty

If the new management curriculum is approved for implementation, it will serve as an educational basis for a new subspecialty in the engineering management area. Thus an URL Officer could serve approximately three years in project management or related billets in both the Lieutenant Commander and Commander grades while still maintaining his warfare specialty. Limited numbers would serve an additional tour at the junior Captain level. Project Managers would then be selected from among those officers of all designators with the desired mix of experience and education. Enclosure (5) sets forth the details of this proposal.

3. The above areas represent those actions which are under the cognizance of the Chief of Naval Personnel.

CHARLES K. DUNCAN

Copy to:
VNCO
COMNAVSHIPSYSCOM
COMNAVAIRSYSCOM
COMNVELECSYSCOM
COMNAVORDSYSCOM
SUPT PG School

"Major Command" equivalency for Project Managers

I. Procedures for Major Command equivalency determination in the case of CNM/SYSCOM designated projects.

A. The Chief of Naval Material will forward a copy of the project Manager charter (prepared in accordance with SECNAVINST 5000.21A) to the Chief of Naval Personnel with a request for Major Command Equivalency determination.

B. The Chief of Naval Personnel shall:

1. Review the charter and determine if the position is equivalent to Major Command. The charter will be retained for use in selection of officers to be Project Managers.

2. If approved as Major Command equivalent, certify to CNM that the position is equivalent and request the following entry be made in the fitness reports of the Project Manager. "This officer is filling a Project Manager billet which has been determined by the Chief of Naval Personnel (reference CNP certifying letter) as being equivalent to Major Command for promotion purposes."

3. Authority to make the above entry shall continue until project management is terminated and management direction and control over specific functions is relinquished to supporting or operating organizations in accordance with paragraph V.B.2. of DON Instruction 5010.14, at which time authority is automatically revoked.

Selection, Ordering and Tour Lengths for Project Managers

I. Procedures for selection of Project Managers

A. Project managers will be selected by board action in accordance with procedures to be established by the Assistant Chief of Naval Personnel for Personnel Control. CNM and SYSCOM representatives in the Bureau of Naval Personnel will be members of the selection board.

B. The following procedures are recommended:

1. Newly designated projects

a. Selection of project managers for newly designated projects shall be initiated by the CNP upon receipt of the Project Manager Charter (or advance notification pending charter completion).

b. In the event the CNM desires to place an officer from within his command in a newly designated project manager position the nomination shall be requested from the CNP concurrent with transmittal of the Charter or advance notification pending charter completion. The nomination will be processed in accordance with selection board procedures mentioned above. In the event the nomination is not approved by the board, fitness report entries regarding major command equivalency shall be withheld until the position is filled with an officer who has been selected by the Board.

2. Projects for which a relief is required.

a. CNM or appropriate SYSCOM Commanders shall initiate a request for the relief of assigned project managers and forward to the CNP via the chain of command. The prospective relief date shall be keyed to major project milestones. Turnover time and enroute training shall also be specified.

b. Upon receipt of the request the CNP will initiate Board action to select a nominee. The selectee will be ordered to report to the appropriate command as project manager of the specified project via the Defense Weapon System Management Course unless he has previously attended.

II. Tour lengths for Project Managers.

A. The initial tour length of Project Managers shall be set at three years, with extensions beyond three years depending on the status of the project. Requests for extension shall be originated by the CNM or appropriate SYSCOM Commander.

Adequacy of Functional WSAM Training

1. Functional training provides a foundation upon which the prospective project manager builds his experience. The Defense Weapon System Management Center course, Wright-Patterson Air Force Base, provides this functional training. Attempts to determine changes necessary to satisfy all potential users were unsuccessful. A description of the present topics covered is included in Appendix I for information purposes

Navy quotas at this school have been fully subscribed in the past. The recommendations contained in enclosure (2) will provide more immediate utilization of graduates of this course. Additional utilization of this curriculum will occur as a result of the increased Navy emphasis on weapon system acquisition management.

The changes proposed by the DOD review group for this course have been considered in formulating the above recommendations.

The acceptance of a new subspecialty category will result in a revision of certain formal educational offerings. The proposed curriculum, currently being developed in detail at the U.S. Naval Postgraduate School and tailored toward weapon system acquisition management, is described in enclosure (4).

Defense Weapon System Management Center

Project Manager's Course

1. This course is ten weeks in length and is taught at the Wright-Patterson Air Force Base, Dayton, Ohio. The course is non- accredited. It is designed primarily for officers enroute to project management related billets.

2. The first three weeks of the course are devoted to giving background material and a basic understanding of the tools and techniques required before starting consideration of the life cycle of weapon system acquisition. Topics covered are listed below.

Curriculum Concept
National Economy/Defense Impact
Why Project Management?
System Acquisition Process
Role OSD I&L and DDR&E
Organization of Hqs Dept of the Army/Navy/Air Force
Project Management Philosophy of the Army/Navy/Air force
Effective Systems Management
Role of Defense Industry
Management of Change
Development Concept Papers
Introduction to Planning Programming Budgeting Systems
JCS Planning & Establishment of Requirements
Establishment of Requirements - Army/Navy/Air Force
Use of Time Sharing
Five Year Defense Program
Budget Process
Program Budget Control
Foreign Technological Threat
Resource Management & SAIMS
System Decision Making
Supporting Management Information Systems
Cost Estimating Techniques
Role of Systems Analysis in DOD
Introduction to Weapon Systems Management
Establishment of a Project Case Study-Army/Navy/Air Force
Establishment of a Joint Project
Establishment of a Project - Army/Navy/Air Force
NAV-TAC-COM Equipment System Exercise
Integrated Logistics Support
OSD View of Resource Management
Introduction to Configuration Management
Systems Analysis - A Method

APPENDIX I
to Enclosure (3)

The fourth week is used to treat activities which occur prior to Contract Definition of a System Project (Concept Formulation). Topics include the following:

Concept Formulation
Introduction to Systems Engineering
Learning Curves
Introduction Government Contracting
Integrated Logistics Support Planning - Army/ Navy
AFSC/AFLC Planning for Integrated Logistics Support During system Life Cycle - Air Force
Advanced Procurement Planning
Technical Development Plans
Concept Formulation Case Study
Total Package Procurement
Project Master Plan - Army/Navy/Air Force
Contract Definition

The fifth week is used primarily to discuss the events and problems which will face the System Project Manager during the Contract Definition. Emphasis on early planning for support of the system/ project is shown. Topics which will be covered in this period include the following:

Transition to Contract Definition
Procurement and Engineering Aspects of Contract Definition
Cost Effectiveness Study
Source Selection with an associated exercise
Multiple Incentives with an associated exercise
Profit Policy
Financial Management C-5A
Contract Definition Case History
Negotiation Process

The emphasis on early planning is continued through the next four weeks by treatment of all subsequent activities during the acquisition phase. Topics covered are as follows:

Transition to Acquisition
Management Techniques During Development
Planning and Control Management (PLACOMS) Exercise
Engineering Responsibilities During Acquisition
Production Planning
Value Engineering and Quality Assurance
Specifications and Related Documents
Government/Industry Problems
Configuration Management - Army/Navy/Air Force
Technical Publication - Army/Navy/Air Force
Facilities Planning
Industry's Role in Configuration Management
Management Techniques During Production
Reliability & Maintainability Theory, Policy & Exercise
Human Factors, Motivation and Confidence Limits

ILS Maintenance Engineering Concepts & Data Systems -Army/ Navy/Air Force
Maintenance Deficiency Reporting System Air Force
Procurement of Management & Technical Data
System Safety
Production Contracts
Total Ship Life Cycle Management
TFX Case Study
Human Engineering
Production Surveillance
Effective Communication
Augmented Contractor Support
Standard Integrated Support Management Systems
Provisioning - Army/Navy/Air Force
Training Requirements - Army/ Navy/ Air Force
Contract Administrative Services
Line of Balance
ASPR Committee
Management Surveys
Weapon Systems Logistics Support Exercise - Army/Navy/ Air Force
Transportation Requirements
International Logistics
Project Manager Discussion - Army/Navy/ Air Force
Mission of DSA in Support of Weapon Systems
Logistics Model (Life Cycle Costing)

The tenth and final week of the course is used to present a computerized management game embodying many of the principles discussed during the preceding weeks. Students are divided into teams which act as system/ project offices. The object of the game is to field a weapon system to meet a specific requirement, optimizing cost, schedule and performance. Sufficient background information is furnished to enable the teams to apply lessons learned during the course. The exercise is completed by team presentations outlining the team approach, problems encountered, lessons learned, and other points of interest.

Postgraduate Education for Project Managers

1. Graduate education significantly enhances the competence of those in the project management field, including those at associated field activities. The structure of the Navy's postgraduate education system has been and should continue to be designed to provide an educational foundation for this area of endeavor as well as many others of Navy interest. This education system is continually changing and evolving to meet Navy needs and stated requirements.

2. Graduate education programs in technical areas conducted at the Naval Postgraduate School and in Business Administration, Management and Industrial Engineering/Management conducted by several civilian universities are presently available to satisfy specific Navy requirements.

As a result of recommendations/suggestions made by various subspecialty advisors the Management curriculum (Curriculum number 817) at the Naval Postgraduate School has been reviewed. The Material Management electives (option 4) will be strengthened and oriented so as to provide more emphasis in weapon system acquisition.

3. A specific educational program in support of project management should consist of formal education in engineering, science, or mathematics followed by graduate education in the field of management, business administration or industrial engineering. A curricula of this type is being developed by the Superintendent, U.S. Naval Postgraduate School and an outline of the curricula is attached as Appendix I to this enclosure. It is considered very likely that this educational offering will attract many highly competent officers who may not be motivated for engineering or science programs. The proposed curricula would be the educational base for a new subspecialty category which is described in enclosure (5) but would also be available to Restricted Line and Staff Corps Officers.

Enclosure (4)

Outline of Proposed Curriculum in
Weapon System Acquisition Management

1. The proposed curriculum is currently being staffed at the U.S. Naval Postgraduate School. Preliminary liaison with the Superintendent indicates that the course will be six quarters (18 months) in length and lead to a Master of Science Degree in Management.

The course will be designed for those officers with an undergraduate degree in a technical discipline. Topics to be covered include:

Financial Management
Engineering Economics
Engineering Aministration
Operations Research
Systems Analysis
Systems Effectiveness
Contact Administration
Weapons System Acquisition
Cost Estimating
Contract Law
Management Information Systems
Quality Control Theory
Human Factors in System Design
Public Sector Finance
Decision Making Under Uncertainty
R&D Administration

APPENDIX I to Enclosure (4)

Project Management Subspecialty

A. Background

1. A large majority of the opinions, comments, suggestions, etc. that have been received indicate that experience in project management associated activities is a major ingredient for producing qualified candidates for the top project manager positions. This is true of both warfare specialists and restricted line specialists. Within the framework of approved career patterns the qualified officer can be developed if the appropriate billets are identified and if the right officers are assigned to these billets in sequence. The experience base can only be developed in this manner.

B. Methodology

1. The following factors were considered in developing this analysis:

a. Weapon System Acquisition Management is not discreetly and uniformly defined, as is an area of endeavor in engineering or science.

b. There exists a variety of activities and billets outside the System Command's Headquarters associated with WSAM.

c. Neither the billets associated with WSAM nor the personnel in training for qualification as project managers are presently uniquely indentified.

d. Weapon System Acquisition Management does and will continue to exist within the framework of the present day Navy. It will evolve as new activities replace old and as specific billets replace present ones.

2. The URL billets identified as relating to Weapon System Acquisition Management were allocated to the warfare specialty career development pattern tour positions so as to determine total requirements at each grade for each warfare specialty and the number of officers with the specified years commissioned service required to flow through the tour position annually. These annual flow rates (equivalent to officers per year group) are shown in Appendices I-III.

C. Conclusions

1. The results of this billet review show that approximately 10% of the URL shore requirements are associated with Weapon System Acquisition Management. This is true of the three major warfare specialties, surface, aviation and submarine and at each of the

grades considered. Although anamolies do exist in certain warfare specialties and at some grades, the Navy can develop through a coordinated series of assignments sufficient officers with the right amount of warfare expertise, education, and WSAM experience from whom the project managers can be selected. A tabulation of the list of billets is as follows:

	GRADE				
Designator	LCDR	CDR	CAPT		TOTAL
1100 (Surf)	135	118	108	=	361
1120 (Sub)	31	42	20	=	93
13XX (Avia)	104	166	78	=	348
TOTAL URL	270	326	206	=	802
1400 (EDO)	338	342	185	=	865
15XX (AEDO)	108	135	86	=	329
1700 (OEDO)	34	52	20	=	106
TOTAL RL	480	529	291		1300
3100 (SC)	385	396	177	=	958
TOTAL NAVY	1135	1251	674		3060

D. Recommendations

1. It is recommended that subspecialty in Project Management be established within the framework of the existing subspecialty concept. This is necessary to discreetly identify the billets and the individuals who pass through these billets. If this concept is approved, the Chief of Naval Personnel will provide to OPNAV OP-01 (SG) the list of billets identified as appropriate for coding in this new area. Concurrently, BuPers will revise the present identification procedures for officers who attain this subspecialty.

E. General

Planned carreer development patterns for URL WSAM subspecialists based on approved warfare specialty career development plans are shown in appendices I through III. Listed for each warfare specialty are the present grade levels, the years commissioned service (YCS) in which the tour is programmed, the total WSAM requirements for that tour, the annual requirements for that tour i. e., the number of officers in each YG with the corresponding YCS in order to meet the total requirements of the tour and lastly a brief description of the tour and types of duties associated therewith.

2. The graduate education in support of this subspecialty is described in enclosure (4).

CHARLES K. DUNCAN

Aviation Warfare Career Development Plan
WSAM Subspecialty

GRADE	YCS	TOTAL WSAM REG ANNUAL REG	Description and Types of Billets
ENS/JG/LT	0-9 1/2	0	First and second sea tours with basic warfare development. Graduate education in support of senior billet requirements.
LCDR	9 1/2-11 1/2	166 billets 83 officers/yr	Air System Command, NPRO NATC, Asst to branch/div heads. OPNAV, Graduate education for those not previously attending.
LCDR/CDR	11 1/2-16 1/2	0	Third sea tour
*CDR	16 1/2-18 1/2	166 billets 83 officers/yr	NMC, Air Sys Com, OPNAV, NavAirLant/Pac, NPRO, Asst PM, Branch Heads, DWSMC
CDR	18 1/2-20 1/2	0	Fourth sea tour.
*CAPT	20 1/2-22 1/2	78 billets 39 officers/yr	OPNAV, Joint Staff, NMC Air Sys Com.
*CAPT	22 1/2-25 1/2	0	Deep draft, Major Command

*Note 1. Commanders who do not serve an entire third sea tour can fill some of the 166 Commander billets allocated to this time frame. Number is a function of operating force requirements.

*Note 2. Captains with 25-30 YCS can fill some of the 78 Captain billets allocated to this time frame. Number is a function of the actual inventory remaining in the Navy and qualified in this area of endeavor.

*Note 3. Designated Major Command Equivalent billets will be filled in this time frame.

APPENDIX II to Enclosure (5)

FIRST ENDORSEMENT on BUPERS ltr Pers Ag-snw of 28 April 1970 to CNO via CNM

From: Chief of Naval Material
to: Chief of Naval Operations

Subj: Career Development and Selection of Weapons System Acquisition Managers

1. Forwarded recommending approval subject to the following comments:

a. The Chief of Naval Material is charged with the responsibility of designating work efforts to be projectized. It is therefore recommended that those Project Manager positions, reporting to either a Systems Commander or to the Chief of Naval Material, that are nominated by the Chief of Naval Material, subject to review by the Chief of Naval Operations, be considered for designation as "equivalent to major command." The largest number of positions to be considered for designation would be at the Systems Command level, since it is the policy of the Chief of Naval Material that projects be designated at that level unless overriding considerations prevail.

b. The concept of selecting project managers through board action is concurred in. It is recommended that the same selection boards responsible for major ship and shore command selections be utilized for the selection of project managers and that the names of officers so selected appear on the same listing. It is further recommended that the boards, while sitting for the purpose of selecting project managers, include a Chief of Naval Material representative of flag rank.

c. While the primary emphasis of the basic correspondence addresses project managers and the unrestricted line officer community, of equal importance are officers of the restricted line and staff corps in positions as acquisition and procurement managers in the weapons systems acquisition process. This combined community, consisting of approximately two-thirds of the total officer population involved in weapons systems acquisition (1300 restricted line and 958 staff corps officers) have been omitted from any career planning pattern. If we are to attract and retain outstanding personnel to these assignments then these personnel must receive recognition through total career planning.

2. The complexity and expense of the weapons systems of today necessitates the development of a highly experienced cadre of officers who are and will be involved in their acquisition. The operator/user experience that the unrestricted line officer possesses has been and will continue to be invaluable in assuring that weapons introduced into the fleet are capable of meeting the threat for which they were conceived. The recognition of this need by the Chief of Naval Personnel Study and the plans to implement the recommendations

thereof will do much to enable the Chief of Naval Material to responsively and successfully carry our assigned responsibilities, both to the Navy and to the Chief of Naval Operations. In the final analysis, Navy success in improving the acquisition process rests in the clear demonstration that the best available talent is assigned to material acquisition requirements in the same manner as provided for operational requirements.

I. J. GALATIN

Copy to:
BUPERS
COMNAVAIRSYSCOM
COMNAVELEXSYSCOM
COMNAVORDSYSCOM
COMNAVSHIPSYSCOM
SUPT PG School

Appendix C

Guidance for WSAM Aviation Subspecialty Board

Qualifications for Project Manager

1. Significant Operational Experience. In all cases this will include at least two operational tours, preferably through department head level. For the URL officer this will usually include command or executive officer duty at the LCDR/CDR level. The emphasis under OTMS will be that of "multiple paths" and careers directed accordingly. The Restricted Line officer should have served in challenging assignments under similar pressure situations and which demanded superior leadership ability.

2. Technically Qualified (In order of desirability)

   a. Masters Level Education in:

      Engineering
      Physical Sciences
      Math, Quantitative Analysis or Computer Sciences

   b. Test Pilot School or Nuclear Power School

   c. Bachelor's Degree + experience in same disciplines as 2a.

3. Management Qualification (In order of desirability)

   a. Masters Level Education in:

      Business Administration
      Finalcial Management
      Industrial Management
      Material Management
      Systems Acquisition Management

   b. Advanced Functional Training:

      Harvard Short Courses (AMP & PMD)
      Defense Systems Management School (Fort Belvoir)
      ICAF

4. Experience

   Ideally 7-8 years in following types of duty:

   a. Washington Area (at least one tour is essential)

(1) Proj. Mgr. Staff (or Projects)
(2) Asst. Proj. Mgr. for Logistics
(3) "Type Desk" at SYSCOMHQ

Note: Highly desireable that (1), (2) and (3) be in same SYSCOM as project for which individual is selected.

(4) Platform (Hardware) Sponsors Organization (e.g. OP-506)
(5) DDR&E (SECDEF) or RDT&E (OP-98)
(6) Financial Mgmt (SAM Associated) e.g. PAMN, SCN.
(7) Defense Nuclear Agency (selected billets).

b. Field Activities.

(1) Naval Plant Rep Offices
(2) SUPSHIPS
(3) OPTEVFOR
(4) Test Centers (e.g., NATC PAX, Naval Missile Center)
(5) LABS - (e.g., NADC Johnsville, NOL, NWC, Larence - Livermoor)
(6) NARFS or NAVSHIPYARDS (Senior Tours)

c. Sea Duty

(1) New Construction (Selected cases)
(2) Fleet/Force Material Support (normally RL only)

Remarks: Weight given technical vice managerial qualification may vary. Technical competence appears to dominate requirement for PM up to the point of production and fleet introduction. Thereafter, management skills are most taxed.

Appendix D

Recommended Selection Criteria for WSAM By Rank

GENERAL. Additional Qualification Designation (AQD) Codes from NAVPERS 15839C, Makual of Naval Officer and Personnel Classification, are used to designate officers who have been chosen by selection boards as WSAMs. The WSAM Selection Board will designate an officer with one of the following two codes:

WS1 - WSAM Program Selectee is an officer who has been selected to the WSAM program by board action. Generally this officer has graduate education and/or experience in weapon systems acquisition management but has not been fully developed in the field.

WW1 - Weapon Systems Acquisition Manager is an officer who has been selected to the WSAM program by board action and who has working experience and superior performance as a weapon systems acquisition manager.

Generally speaking, the AQD WW1 is assigned only to officers who have had significant qualifying experience in the Naval Material Command. Those billets considered to provide the opportunity for qualifying experience have been identified by CHNAVMAT. These billets are coded with AQDs WT1, WP1, and WW1. The list is available from OP-104 and should be used by the Selection Board as a ready reference.

GUIDELINES FOR APPLICATION OF WSAM AQDs TO VARIOUS RANKS

CAPTAIN-WW1

1. Must have technical or business management qualifications as follows:

a. technical qualifications

(1) masters level education in engineering, physics, math, or computer sciences or

(2) bachelor's degree plus at least two assignments in the Naval Material Command in positions providing experience in the same discipline.

b. Business Management Qualifications

(1) masters level education in systems acquisition, business administration, finance industrial or engineering administration, economics, procurement and contracting or

(2) five-month Program Managers Course at Defense Systems Management College (Fort Belvoir) followed immediately by duty in the Naval Material Command in any WSAM billet (WW, WP or WT).

2. Must have at least 7 years of experience (including one tour within the last 4 years) in billets coded WW1, WP1, or WT1. At least one tour in the following types of billets is required:

a. Deputy Project Manager - This is the second in command billet in the office of a CNM-level or SYSCOM-level designated project manager.

b. Deputy Project Manager for a Function - This is a billet in the office of a CNM-level or SYSCOM-level designated project manager with staff responsibility for a major component of the weapon system (such as avionics), a major phase of the development, production, and support cycle (such as Director, ILS) or a major division of the project office activity (such as Business/Financial Manager). Experience should have been at the 0-5 level or above.

c. Assistant Project Manager working for a Project Manager in a Systems Command functional group (engineering, contracts, logistics). The officer in this billet is not under the line functional authority of the project manager but devotes a substantial portion of his time to a specific project and normally participates substantially in the decision-making process. Billets in this category have AQD WW1 or WP1.

d. NAVPRO or SUPSHIPS - This is the top billet in these activities and the officer must have served in this activity while the associated contractor was in the production phase of a weapon system managed by a designated project manager at the CNM or SYSCOM level. The billets in this category have AQD WW1.

e. On-Site Project Officer - This is a billet in a NAVPRO, SUPSHIPS, TECHREP, or DCAS office in which the incumbent works on one weapon system and serves as the primary working level contract for a CNM-level or SYSCOM-level designated project manager Billets in this category have AQD WW1 or WP1.

f. "Type Desk" at SYSCOMHQ

3. Must have been a top performer in those WSAM qualifying positions.

CAPTAIN-WS1

1. It is normally not desirable to include officers of this rank in the WSAM Career Management Program if they fail to meet the criteria established for AQD WW1. Exceptions may be made for officers who have been deep selected to the rank within the last two years, are presently serving in a WP1 or WW1 billet, and have the requisite technical or business management education qualifications.

COMMANDER-WW1

1. The technical or business management qualifications are the same as for Captains.

2. Must have at least 5 years of experience (including one tour within the last 4 years) in billets coded WW1, WP1, or WT1. At least one tour in a billet coded WP1 is required.

3. Must have been a top performer in those WSAM-qualifying positions.

COMMANDER-WS1

1. The technical or business management qualficiations are the same as for Captains.

2. Must have at least 3 years of previous experience in billets coded WP1 or WT1.

3. Must have been a top performer in billets coded WP1 or WT1.

LIEUTENANT COMMANDER-WW1

Not applicable

LIEUTENANT COMMANDER-WS1

1. The technical or business management qualifications are the same as for Captains except that technical requirements may be met by a bachelor's degree plus one assignment in the Naval Material Command in any WT position.

2. Must have a superior performance record.

LIEUTENANT-WS1

1. Must have bachelor's degree in engineering, physics, math, or computer science.

2. Must have superior performance record

Public Law 93-294

AN ACT

May 31, 1974
H. R. 12670]

To amend section 301 of title 37, United States Code, relating to incentive pay, to attract and retain volunteers for aviation crew member duties, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Aviation Career Incentive Act of 1974".

Aviation Career Incentive Act of 1974.

SEC. 2. Chapter 5 of title 37, United States Code, is amended as follows:

37 USC 301a note.

(1) Section 301(a)(1) is amended by striking out "a crew member" and inserting in lieu thereof "an enlisted crew member".

37 USC 301.

(2) Section 301(g) is repealed.

Repeal.

(3) The following new section is inserted after section 301 and a corresponding item for that section is inserted in the chapter analysis:

"§ 301a. Incentive pay: aviation career

37 USC 301a.

"(a)(1) Subject to regulations prescribed by the President, a member of a uniformed service who is entitled to basic pay is also entitled to aviation career incentive pay in the amount set forth in subsection (b) of this section for the frequent and regular performance of operational or proficiency flying duty required by orders.

Operational or proficiency flying.

"(2) Aviation career incentive pay shall be restricted to regular and reserve officers who hold, or are in training leading to, an aeronautical rating or designation and who engage and remain in aviation service on a career basis.

Regular and reserve officers.

"(3) Under regulations prescribed by the Secretary of Defense, the Secretary of Transportation with respect to the Coast Guard when it is not operating as a service in the Navy, or the Secretary of Commerce and the Secretary of Health, Education, and Welfare with respect to members under their respective jurisdiction, an officer (except a flight surgeon or other medical officer) who is entitled to basic pay, holds an aeronautical rating or designation, and is qualified for aviation service under regulations prescribed by the Secretary concerned, is entitled to continuous monthly incentive pay in the amount set forth in subsection (b) of this section that is applicable to him. A flight surgeon or other medical officer who is entitled to basic pay, holds an aeronautical rating or designation, and is qualified for aviation service under regulations prescribed by the Secretary concerned, is not entitled to continuous monthly incentive pay but is entitled to monthly incentive pay in the amounts set forth in subsection (b) of this section for the frequent and regular performance of operational flying duty.

Coast Guard officers.

"(4) To be entitled to continuous monthly incentive pay, an officer must perform the prescribed operational flying duties (including flight training but excluding proficiency flying) for 6 of the first 12, and 11 of the first 18, years of his aviation service. However, if an officer performs the prescribed operational flying duties (including flight training but excluding proficiency flying) for at least 9 but less than 11 of the first 18 years of his aviation service, he will be entitled to continuous monthly incentive pay for the first 22 years of his officer service.

"(5) If upon completion of either 12 or 18 years of aviation service it is determined that an officer has failed to perform the minimum prescribed operational flying duty requirements during the prescribed periods of time, his entitlement to continuous monthly incentive pay

ceases. If at the completion of 12 years of aviation service entitlement to continuous monthly incentive pay ceases, entitlement to that pay may again commence at the completion of 18 years of aviation service upon completion of the minimum operational flying duty requirements, such pay to continue for a period of time as prescribed in accordance with this section. However, if entitlement to continuous monthly incentive pay ceases in the case of any officer at the completion of either 12 or 18 years of aviation service, such officer remains entitled to monthly incentive pay for the performance of subsequent operational or proficiency flying duties up to the maximum period of time prescribed in accordance with this section.

Definitions.

"(6) For the purposes of this section, the term—

"(A) 'operational flying duty' means flying performed under competent orders by rated or designated members while serving in assignments in which basic flying skills normally are maintained in the performance of assigned duties as determined by the Secretary concerned, and flying performed by members in training that leads to the award of an aeronautical rating or designation; and

"(B) 'proficiency flying duty' means flying performed under competent orders by rated or designated members while serving in assignments in which such skills would normally not be maintained in the performance of assigned duties.

"(b) A member who satisfies the requirements described in subsection (a) of this section is entitled to monthly incentive pay as follows:

"(1) For an officer in pay grades O-1 through O-10 who is qualified under subsection (a) of this section:

"Phase I

"Monthly rate:	Years of aviation service (including flight training) as an officer
$100	2 or less.
$125	Over 2.
$150	Over 3.
$165	Over 4.
$245	Over 6.

"Phase II

"Monthly rate:	Years of services as an officer as computed under section 205
$225	Over 18.
$205	Over 20.
$185	Over 22.
$165	Over 24 but not over 25.

An officer is entitled to the rates in phase I of this table until he has completed 18 years of service as an officer, after which his entitlement is as prescribed by the rates in phase II, if he has completed at least 6 years of aviation service as an officer. However, if he has over 18 years of service as an officer, but not at least 6 years of aviation service as an officer, he continues to be subject to the rates set forth in phase I of the table that apply to an officer who has less than 6 years of aviation service as an officer. An officer in a pay grade above O-6 is entitled, until he completes 25 years of service as an officer, to be paid at the rates set forth in this table, except that an officer in pay grade O-7 may not be paid at a rate greater than $160 a month, and an officer in pay grade O-8, or above, may not be paid at a rate greater than $165 a month.

"(2) For a warrant officer who is qualified under subsection (a) of this section:

"Monthly rate:	Years of aviation service as an officer
$100	2 or less.
$110	Over 2.
$200	Over 6.

For the purposes of clauses (1) and (2) of this subsection, the term 'aviation service' means the service performed, under regulations prescribed by the Secretary concerned, by an officer, and the years of aviation service are computed beginning with the effective date of the initial order to perform aviation service.

"Aviation service."

"(c) In time of war, the President may suspend the payment of aviation career incentive pay.

Wartime, payment suspension.

"(d) Under regulations prescribed by the President and to the extent provided for by appropriations, when a member of a reserve component of a uniformed service, or of the National Guard, who is entitled to compensation under section 206 of this title, performs, under orders, duty described in subsection (a) of this section for members entitled to basic pay, he is entitled to an increase in compensation equal to 1/30 of the monthly incentive pay authorized by subsection (b) (1) or (2) of this section, as the case may be, for the performance of that duty by a member of corresponding years of aviation or officer service, as appropriate, who is entitled to basic pay. Such member is entitled to the increase for as long as he is qualified for it, for each regular period of instruction, or period of appropriate duty, at which he is engaged for at least two hours, including that performed on a Sunday or holiday, or for the performance of such other equivalent training, instruction, duty or appropriate duties, as the Secretary may prescribe under section 206(a) of this title. This subsection does not apply to a member who is entitled to basic pay under section 204 of this title.

37 USC 206.

"(e) The Secretary of Defense shall report to Congress before July 1 each year the number of rated members by pay grade who—

Report to Congress.

"(1) have 12 or 18 years of aviation service, and of those numbers, the number who are entitled to continuous monthly incentive pay under subsection (a) of this section; and

"(2) are performing operational flying duties, proficiency flying, and those not performing flying duties.".

SEC. 3. Section 715 of the Department of Defense Appropriation Act, 1973 (86 Stat. 1199), and section 715 of the Department of Defense Appropriation Act, 1974 (87 Stat. 1041), are each amended by striking out the last sentence.

Proficiency flying.

SEC. 4. Notwithstanding the amendments made by this Act, an officer who was entitled to incentive pay under section 301(a)(1) of title 37, United States Code, on May 31, 1973, or on the day before the effective date of this Act, if otherwise qualified on the day before the effective date of this Act, is entitled to monthly incentive pay as prescribed in either clause (1) or (2) of this section, as follows:

Hazardous duty pay.
37 USC 301a note.
Ante, p. 177.

(1) If he is credited with 6 or less years of aviation service as an officer, and with less than 12 years of service as an officer, he is entitled to monthly incentive pay either—

37 USC 301.

(A) in the amount he was receiving under section 301(b) of that title on May 31, 1973, or on the day before the effective date of this Act, but with no entitlement after either of those dates, as applicable, to any longevity pay increases or increases resulting from promotion to a higher grade until such time as the rate to which he is entitled under section 301a(b) of that title, as added by this Act, is equal to or greater than the amount he was receiving under that section on May 31, 1973, or on the day before the effective date of this Act, and thereafter his entitlement is as prescribed by that section, as added by this Act; or

Ante, p. 177.

(B) at the rate prescribed by section 301a(b) of that title, as added by this Act;

whichever is greater. However, an officer who is promoted and assigned to pay grade O-7 or above during the 36-month period following the effective date of this Act may not receive more than the rate which existed for that pay grade, as appropriate, prior to June 1, 1973.

(2) If he is credited with more than 6 years of aviation service as an officer, or less than 6 years of aviation service but more than 12 years of service as an officer, he may receive monthly incentive pay at the rate prescribed in the table in section 301a(b) of title 37, United States Code, as added by this Act, that is applicable to him, or $165, whichever is greater, for not more than 36 months after the effective date of this Act, notwithstanding the provisions of section 301a(a) of that title, as added by this Act, with respect to prescribed operational flying duties (including flight training but excluding proficiency flying). However, under this clause, an officer who is assigned to the pay grade O-7 on the effective date of this Act, or is promoted to the pay grade O-7 during the 36-month period following the effective date of this Act, may not receive more than $160 per month while assigned to that grade.

The amount to which a reserve officer who is entitled to compensation under section 206 of title 37, United States Code, is entitled under this section is governed by the provisions of section 301a(d) of that title, as added by this Act.

Annual report, public release. 37 USC 301a note.

SEC. 5. A yearly report containing such data as necessary to monitor the progress of this bill shall be made by the Department of Defense in cooperation with the Senate and House Armed Services Committees and released publicly.

Effective date. 37 USC 301a note.

SEC. 6. This Act becomes effective on the first day of the first month after enactment.

Approved May 31, 1974.

List of References

1. Memorandum from the Chief of Naval Material to the Vice Chief of Naval Operations, 8 October 1969, Subj: Procurement/Weapons System Acquisition Officer Personnel Career Requirement.

2. U.S., Congress, House of Representatives, Subcommittee on Economy in Government, Report, 91st Cong., 1st Sess., May 22, 1969.

3. U.S., Congress, Senate, Committee on Armed Services, Defense Authorization Act, Report 290, 91st Cong., 1st Sess., July 3, 1969.

4. Memorandum from the Vice Chief of Naval Operations to the Chief of Naval Material, 19 November 1969, Subj: Procurement/Weapons Systems Acquisition Officer Personnel Career Requirement.

5. Defense Science Board Task Force on Research and Development Management, Final Report on Systems Acquisition, Cheatham, Dr. Thomas P., Jr., Summer 1969.

6. Memorandum from the Chief of Naval Operations to the Chief of Naval Personnel, 2 December 1969, Subj: Project Managers; training of.

7. Letter from Commander Naval Electronic Systems Command to the Chief of Naval Material, 11 May 1970, Subj: Analysis of Career Patterns of Unrestricted Line Officers on Present Flag List for Naval Material Experience.

8. Letter from the Chief of Naval Operations to the Chief of Naval Personnel, 11 August 1970, Subj: Career Development and Selection of Project Managers.

9. Report of the Aviation WSAM Subspecialty Board to the Chief of Naval Personnel, November 1972.

10. Letter from the Chief of Naval Material to the Chief of Naval Personnel, 9 January 1975, Subj: Weapon Systems Acquisition Management (WSAM) Selection Board Information.

11. The Commission on Government Procurement, Study Group #12, Final Report, Major System Acquisition, Volume I, January 1972.

12. Brigadier General Winfield S. Scott, III, USA, "Educating the DOD Program Manager", Defense Management Journal, Vol. VIII, April 1972, p. 27.

13. Major George N. Giacoppe, "The DOD Program Manager", Unpublished Thesis, Defense Systems Management School, 1973.

14. Paul J. Tomes, "A Survey of Student Opinions", Unpublished Thesis, Defense Systems Management School, 1973.

15. Defense Systems Management School, Survey of PMC Graduates, February 1974.

16. Colonel E. E. Lockwood, USA, "A Proposed Method of Selecting and Training Future Program Managers", Unpublished Thesis, U.S. Army War College, 1973.

17. Major R. E. Smythe and Captain W. J. McMullen, USAF, "An Evaluation of the Major Qualifications Desired of Air Force System Program Managers", Unpublished Thesis, Air Force Institute of Technology, 1975.

18. Peter F. Drucker, Management: Tasks, Responsibilities, Practices, (New York, Harper & Row, 1974).

19. Office of the Secretary of the Navy, Navy Marine Corps Acquisition Review Committee, Report, Volume 2, January 1975.

20. Lieutenant Commanders T. J. Loftus and B. E. Allen, "Career Development of the Naval Project Manager", Unpublished Masters Thesis, Naval Postgraduate School, 1973.

21. Letter from the Chief of Naval Material to the Chief of Naval Personnel, 23 September 1976, Subj: Major Project Manager Information.

22. Bureau of Naval Personnel, Unrestricted Line Officer Career Planning Guidebook, NAVPERS 15197, Undated.

23. Bureau of Naval Personnel, Officer Personnel Newsletter, Spring 1976.

24. Letter from the Chief of Naval Personnel (Pers 4) to Lieutenant Commander Terence J. Cooney, 8 February 1977, Subj: Access to Career Development and Promotion Statistics; request for.

25. Lieutenant Commander A. L. Griggs, USN, "The Middle Management Naval Aviator: An Analysis of Career Development and Utilization for Years 1972-1977, Unpublished Thesis, Naval War College, April 1971.

26. Aviation Career Incentive Act, Public Law 93-294 (1974), 37 U.S.C. Chapter 5 sec. 301.

27. Bureau of Naval Personnel, Officer Personnel Newsletter, Winter 1975.

28. Naval Postgraduate School, Catalogue 1976-1977.

29. Captain Frank H. Featherson, USN, "The Business of Project Management:, U.S. Naval Institute Proceedings, January 1972.

30. Memorandum from the Deputy Secretary of Defense to the Secretaries of the Military Departments, Director of Defense Research and Engineering, Assistant Secretaries of Defense, The General Counsel, Assistants to the Secretary of Defense and Directors of Defense Agencies, 28 May 1970, Subj: Policy Guidance on Major Weapon Systems Acquisition.

31. Deputy Secretary of Defense William P. Clements, Remarks Delivered to the Students of the Program Management Course and the Participants of the First General/Flag Orientation Seminar on Systems Acquisition Management, Defense Systems Management School, 16 October 1973.

32. U.S., Congress, House of Representatives, Subcommittee for the Department of Defense, Committee on Appropriations, Hearings, 10 May 1973.

33. Robert L, Kahn, "Value Expectancy and Mythology", Monthly Labor Review, April 1968.

34. Defense Systems Management College, Survey of PMC Graduates, 1974-1976.

35. Senator Lawton Chiles, Bannerman Memorial Lecture Series, Naval Postgraduate School, 23 April 1974.

36. Admiral Isaac C. Kidd, Jr., "Naval Material Command Supplies Everything but People" U.S. Naval Institute Proceedings, August 1975.

37. Letter from the Chief of Naval Material to the Chief of Naval Operations, 28 April 1970, Subj: Career Development and Selection of Weapon Systems Acquisition Managers.

38. Letter from the Secretary of the Navy to the 1966 Line Flag Selection Board, quoted in "Does the U.S. Navy offer the Unrestricted Line Officer Subspecialist a Career", CDR P. I. Bledsoe, Unpublished Thesis, Industrial College of the Armed Forces, 1975.

39. Letter from the Secretary of the Navy to the 1977 Line Flag Selection Board, quoted in Navy Times, Washington, D. C., 31 January 1977.

40. Bureau of Naval Personnel Instruction 1040.2A, Subject: Officer Weapon Systems Acquisition Management (WSAM) Program, 5 April 1976.

Initial Distribution List

		No. Copies
1.	Defense Documentation Center Cameron Station Alexandria, Virginia 22314	2
2.	Library, Code 0142 Naval Postgraduate School Monterey, California 93940	2
3.	Department Chairman, Code 54 Department of Administrative Sciences Naval Postgraduate School Monterey, California 93940	1
4.	Asst. Professor C. K. Eoyang, Code 54Eg Department of Administrative Sciences Naval Postgraduate School Monterey, California 93940	1
5.	Lieutenant Commander K. L. Patterson, Code 54Ph Department of Administrative Sciences Naval Postgraduate School Monterey, California 93940	1
6.	Chief of Naval Material (MAT-023) Navy Department Washington, D. C. 20360	1
7.	Chief of Naval Personnel (Pers 403b) Navy Department Washington, D. C. 20370	1
8.	LCDR Terence J. Cooney, USN Naval Air Systems Command (AIR-5322) Navy Department Washington, D. C. 20360	1

Thesis 169731
C7523 Cooney
c.1 Weapon system acquisition management a viable career program for the unrestricted line aviation officer.

30 NOV 78 25871
24 AUG 79 25400
1 OCT 79 25400
AUG 8 85 30041

Thesis 169731
C7523 Cooney
c.1 Weapon system acquisition management a viable career program for the unrestricted line aviation officer.

BOUND BY

Weapon system acquisition management :
3 2768 002 09400 5
DUDLEY KNOX LIBRARY